An Address
ON
ASEPTIC AND ANTISEPTIC SURGERY.

Delivered at the Annual Meeting of the Harveian Society of London on Jan. 8th, 1903,

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MR. PRESIDENT AND GENTLEMEN,—In vacating the presidential chair I have to congratulate the Harveian Society of London on the successful session which it has had and the high standard of work which has been brought before it. The clinical evenings have been more especially successful and we have also had two discussions of great interest. Indeed, it seems to me that the most useful work for this society would be in the direction of the exhibition of clinical cases and set discussions on topics of general interest rather than in the contribution of papers, which are, perhaps, more learned but only of special and comparatively limited interest. During this session we have also to congratulate ourselves on the admirable and extremely useful Harveian Lectures delivered by Mr. Alban H. G. Doran.

At the present time one hears a great deal about two surgical matters which I believe to be intimately associated—viz., "aseptic surgery" and "stitch and ligature infection"—and I should like to say a few words about this most modern development of Listerism, the so-called "aseptic surgery." I use the epithet "so-called" because as at present employed this term "aseptic surgery" is, in my opinion, an entire misnomer. In my large work on antiseptic surgery published more than 20 years ago I used the term "aseptic surgery" in contrast with the term "antiseptic surgery," but with a different meaning from that in which these terms are employed to-day. "Antiseptic surgery" I defined as surgery directed against sepsis, or at any rate against septic organisms which have already entered a wound, the aim of antiseptic surgery being therefore the eradication of these organisms from the wound. By the term "aseptic surgery," on the other hand, I implied surgery in which means were taken to prevent the entrance of organisms into the wound. Aseptic surgery or the production of an aseptic wound could be carried out in a great variety of ways, but so long as the end was obtained—namely, the prevention of sepsis in the wound—the various methods came under the heading of aseptic surgery. At the present time these terms are employed quite differently, antiseptic surgery being used to indicate methods of wound treatment in which antiseptics are employed and aseptic surgery methods where no antiseptics are employed This, as is at once evident, is a totally different conception, and I believe a conception which does not touch the root of the matter. The root of the matter is not the use of particular methods but the prevention of the entrance of bacteria, and therefore to label the methods of treatment according to the materials employed is apt to lead the surgeon to overlook the principle involved. Besides, there is in reality no such contrast between the two methods, because aseptic surgery as at present defined—that is to say, surgery without the use of antiseptics—is impossible, for antiseptics are the only means that can be employed for the most important of all the precautions which are required in providing for an aseptic wound—namely, the disinfection of the skin both of the patient and the surgeon.

Since the introduction of this so-called aseptic surgery a great deal has been written about the employment of buried stitches and the methods of disinfection of silk, catgut, &c. In fact, to some this is apparently the most important problem in connexion with the treatment of wounds. The difficulty found in sterilising sutures, whether catgut or silk, is most remarkable, and would lead one to suppose that there is something special about silk and catgut which insures the vitality of bacteria in a most extraordinary manner. I was very much struck a few weeks ago in receiving an American criticism of the sixth volume of the Manual of Surgery which Mr. F. F. Burghard and I are publishing. The criticism was with special reference to our recommendations as regards the repair of the abdominal wall after laparotomy. We had advocated the practice of stitching up the abdominal wall in several layers and burying catgut and silk sutures in the wound so as to insure accurate apposition and strong union of the line of incision. Our experience is that this is a point of the greatest importance and that in wounds so stitched up the occurrence of hernial protrusion after laparotomy practically does not take place, nor have we had any trouble with our buried sutures. In this critique, however, the writer expressed great surprise that we still adhered to the use of buried sutures. He evidently looks on their use as an old-fashioned and dangerous procedure—in other words, he seems to be accustomed to meet with suppuration in wounds where ligatures and sutures have been buried. I was also very much interested with the Lister number of the *British Medical Journal*, published last month, and more especially with the paper by Dr. Lucas Championnière. From what Dr. Championnière said it is evident that the same troubles were occurring in France with regard to disinfection of ligature materials and that apparently suppuration takes place there not infrequently in wounds treated by so-called aseptic methods. Dr. Championnière points out that in his experience, using, as he does, treatment carried out strictly on Listerian principles, these troubles do not occur and in that I fully agree with him. To me this apparently frequent trouble with stitch and ligature infection is a most remarkable state of matters of which I have practically no experience. I use catgut as frequently as I formerly did and I have no hesitation in uniting muscular planes with silk and leaving the stitches buried, and although no one is infallible and occasionally asepsis is not obtained this is so extremely rare that it is quite evidently due to some oversight in the methods employed and not to anything wrong with the material. For my own part, with that experience and knowing that the experience of others who have been trained up in Listerian methods is the same, I cannot admit that when infection occurs in a wound it is necessarily or even probably due to ligatures and stitches. It would naturally happen that if a wound becomes infected during an operation the stitches, being dead material in which infective organisms can lie and multiply, must necessarily be extruded from the wound, and such wounds will not heal until these deep stitches have come out. But to assume that therefore it is the sterilisation of the stitches that is at fault is an entirely illogical conclusion. The deep stitches come out because they are dead material and harbour septic substances, but in my opinion it is more probable that these troubles arise from imperfection in the methods employed to exclude bacteria during the operation than from any inherent vice on the part of the stitches. It may no doubt be true that in some cases the buried sutures are the primary source of infection of the wound, but that need not necessarily be because they have been imperfectly sterilised or because there is any inherent difficulty in sterilising them, but because they have become infected after sterilisation in the course of their transit from the sterilisers to the wound. These troubles as regards disinfection of the ligatures and stitch abscesses have essentially arisen since the introduction of methods from which antiseptics have been more or less completely excluded, and I may therefore make a few remarks on this so-called aseptic method.

This method was, in the first instance, a natural development of Listerism carried out by surgeons who were, on the one hand, skilled bacteriologists and, on the other hand, skilled in the aseptic treatment of wounds by the Listerian method. These surgeons followed out to its logical extreme the Listerian principle of avoiding as far as possible the contact of antiseptics with the wounds while at the same time preventing the entrance of living organisms, and being skilled bacteriologists they saw that it was quite possible to avoid the use of antiseptics during operations provided only that sufficient precautions were taken. They also fully recognised the fact that if aseptic treatment was to be carried out successfully it was essential that as the use of antiseptics was diminished so the precautions necessary to exclude bacteria from the wounds must be multiplied. In its entirety the operation is carried on in an apartment from which dust is excluded by filtration of the air, as, for example, in a glass chamber, allowing the onlookers to see what is taking place without, however, there being any exposure of

the area of operation to the dust which is necessarily raised by their entrance into the operating theatre. Elaborate precautions must be taken to avoid any risk of infection during the operation; the surgeon wears a mask and cap to cover his hair, is completely covered with aseptic clothing, he has always the same assistants or, at any rate, assistants who are very largely experienced in these methods, and he is intent on avoiding every possible source of infection from outside. In the hands of surgeons who are skilled bacteriologists and who are thoroughly impressed with all the precautions necessary and who have skilled assistants no objection can of course be made to the method employed, if they think that they can obtain better results than they otherwise could. My criticism is that the results are not in any way better than those obtained with the limited use of antiseptics, that the precautions necessary are very much more troublesome, the risks of error very much greater, and that as a means of instruction and as a method to be employed by practitioners generally it is totally impracticable. Further, it must be remembered that all practitioners, or even all surgeons, are not skilled bacteriologists and the greater the precautions necessary for carrying out the treatment the greater are the chances of error and the risks of failure. In former days the materials employed, and not the principles and details of the method, were looked on by many as the essential points, and thus Listerism was often spoken of as "carbolic acid treatment," the "spray and gauze method," &c. Needless to say, with the neglect of the details and the erroneous and usually very excessive application of antiseptics, the hoped-for result—viz., an aseptic wound—was not always obtained. And so at the present time the same mistake is very likely to be made and most stress laid on the external surroundings, on the marble operating-room, the beautifully tessellated floors, the absence of corners or angles in the room, the washing-basins provided with foot-taps, and so forth, while the real essentials of the treatment—namely, the careful disinfection of the skin and hands and the avoidance during the operation of any possibility of contaminating instruments, ligatures, stitches, sponges, or the wound itself—tend to be overlooked. And I believe this is the chief reason why we hear of so much trouble with ligatures.

The difficulties in the way of success by this method, however, are not limited to the surgeon himself, but also involve his assistants and to an even greater extent the nurses. No doubt in some hospitals where this treatment is rigorously carried out the assistants and nurses are very thoroughly trained, but nurses especially, not being skilled in bacteriology, are very liable to error, and, after all, they can only reflect the impression which is produced on the ordinary intelligent mind by the precautions employed and which they have been enjoined to enforce. In many cases, no doubt, one comes across nurses who understand a great deal about the precautions which are required and who have evidently been very carefully drilled. But even these are sometimes apt to commit errors which tend to vitiate the whole procedure. For example, if the patient move during the operation the nurse replaces him in the proper position on the table, rearranges the blankets, and without any fresh purification of her hands proceeds to hand swabs, &c. Indeed, if she wanted to disinfect her hands again she has in all probability no antiseptic at hand for the purpose. Or an instrument falls on the floor and she picks it up; or the surgeon wishes something out of his bag, and she opens his bag and gets what is required and either forgets or has not the opportunity of disinfecting her hands. As a matter of fact, after such an accident, if no antiseptics are present she should take no further part in the operation, but it is seldom possible to dispense with her services. On the other hand, if she were washing sponges out of an antiseptic or had antiseptics in the neighbourhood her hands would be disinfected for her even though she forgot the necessity of doing it. And even the best-trained nurses are apt to place too much confidence in the precautions that they take, especially in the boiling of instruments. An instrument falls on the floor; the nurse disinfects it again; she takes it to the steriliser, puts it in for a second or two, and brings it back within the minute, as she says, sterilised. It has not been drilled into her that sterilisation cannot be accomplished at this lightning speed. And very likely the steriliser was in another room and she has to turn the handle of the door and touch various articles which have not been disinfected before she comes back, and then she has no facilities for disinfection of her hands again. And so I could go on enumerating many sources of infection which may seem trivial but are nevertheless essential to a certain result and where the absence of antiseptics completely handicaps those engaged in the operation. But, on the other hand, many nurses who come from so-called "aseptic" hospitals have evidently been very imperfectly drilled, and indeed have not the faintest glimmering of what asepsis really means, and one is constantly in peril of employing dressings, swabs, &c., which have not been properly sterilised. I need not take up space in enumerating these grosser errors; they strike the eye at once. It is very common to find that the nurse has spent no end of time and trouble in preparing a basin full of rolls of beautifully white wool with or without some gauze around them, but has not sterilised them in any way, indeed, has not realised that they needed to be sterilised as they are made of "medicated" cotton-wool. She will also have probably got in various antiseptic dressings, opened the packets, cut them into beautiful squares, and wrapped them all up in a clean but not sterilised towel along with bandages, medicated cotton-wool, &c. To sterilise the skin one will probably be presented with a basin containing a boiled nail-brush, soap, and boiled water, but no antiseptic; or if one asks for, say, carbolic acid a dash of 1 in 20 is put into the water. Indeed, the mixture of asepsis and sepsis is most ludicrous, but, at the same time, extremely dangerous. That errors of this kind can be committed and that the nurse is nevertheless perfectly satisfied that she is contributing to the asepsis of an operation is an example of the impression made on many untrained minds with regard to the precautions necessary to carry out this treatment.

While, therefore, as I said at the commencement, the method is one with which I have no fault to find in theory or if carried out by a trained bacteriologist it is not one which I think can by any possibility be recommended for general use, and I do not think that students, who will not necessarily have all the arrangements at hand in after-life, should be instructed in it as the only or chief method which they should employ. As a matter of fact, for the proper carrying-out of asepsis without antiseptics a regular institution is required and assistants and nurses who have been long trained in the methods are necessary. In our hospitals, where we are constantly changing our house surgeons, dressers, and nurses, the difficulties in the way of obtaining constant success are very great and unless in the hands of a few who are earnestly impressed with the precautions necessary constant success is practically unattainable. In private work the conditions are still more difficult. As a matter of fact, operations in private houses without antiseptics are hardly practicable and they must involve the taking of the same assistant and the same nurse to all cases. No doubt if this sort of treatment is really necessary nothing further can be said than that everyone must try to carry it out, but it is not really necessary, because those who employ antiseptics in a limited manner on the Listerian principles obtain equally good results—indeed, I venture to assert, more constant results; and one cannot get better results than rapid and constant union by first intention without any local or general disturbance. For my own part I take a very pessimistic view of the present state of matters with regard to wound treatment and I believe that if this so-called aseptic treatment is continued a time will come when the frequency of sepsis in wounds will be very considerable, and when the thoroughness that is characteristic of surgery at the present time will become diminished, as, indeed, is already happening in various ways, such as the careful stitching up of the deeper parts of abdominal wounds. On the other hand, the intelligent use of antiseptics saves a great deal of trouble, makes the result more certain, and does not interfere in any way with the after progress of the wound. If I contrast the methods employed the differences will be seen to be really very slight but at the same time, I venture to think, of very great importance.

DISINFECTION OF THE SKIN.

Surgery without Antiseptics and Limited Use of Antiseptics.

This ought to be the same in both cases. The actual antiseptics employed, the length of time for which they are allowed to act, and so forth, vary according to the fancy of the surgeon, but antiseptics must be used for the purpose. At the same time there is a tendency to less thorough disinfection in the so-called "aseptic" surgery and some surgeons, indeed, are satisfied with violent scrubbing of the skin with a nail-brush and clean water without the use of antiseptics. This, of course, at once takes the method out of

the region of asepsis. A common error that I find nurses commit is that the night before the operation the skin is washed with soap and water and then with ether, and then a fine piece of lint very firmly wrung out of 1 in 40 carbolic acid is applied over the skin and left on. It is quite clear that here there is no disinfection of the skin; the lint is practically wrung dry and there is no carbolic acid to come in contact with the skin.

DISINFECTION OF INSTRUMENTS.

Surgery without Antiseptics.	*Limited use of Antiseptics.*
Instruments boiled just before the operation and placed in sterilised salt solution till required.	Instruments boiled, placed in 1 in 20 carbolic acid lotion till required. Before use the carbolic acid is rinsed away with weak sublimate solution or in the case of abdominal operations with sterilised salt solution.

Disinfection of instruments, &c., by heat instead of by antiseptics is without doubt a great improvement on former methods, but when the instruments, ligatures, &c., are removed from the steriliser unless they are kept in an antiseptic solution till they are required there is always, especially in hospital work, a risk of their becoming infected. In spite of the fact that the organisms present in the dust floating in the air are essentially non-pathogenic, one must not reckon on that too completely and it is much better to avoid the introduction as far as possible of any organisms than to take one's chance that those that do enter are non-pathogenic.

ASEPTIC AREA AROUND THE SEAT OF OPERATION.

Surgery without Antiseptics.	*Limited Use of Antiseptics.*
Towels which have been boiled or steamed are placed around the area of operation. They are practically dry, indeed often completely dry, and contain no antiseptic.	Towels which have been boiled and subsequently placed in 1 in 2000 sublimate solution are lightly wrung out and arranged around the area of operation.

In the two cases the only difference is that in the method which I advocate the towel retains some moist antiseptic, whereas in the other it is absent. The advantage of the former, in my opinion, is that dust falling on the towel or getting on it from other sources is, at any rate, fixed and may very possibly be disinfected, and also that the hands or instruments resting on the towels are not so likely to pick up dust. Further, infective material which may have got on to the hands or instruments during the course of the operation may also become disinfected.

GENERAL PRECAUTIONS DURING THE OPERATION.

Surgery without Antiseptics.	*Limited Use of Antiseptics.*
There is no antiseptic material present in which the hands may be re-disinfected should accidental contamination take place. The surgeon must consequently devote extreme attention to the avoidance of any possible contamination of hands or instruments during the course of the operation, and where the operation lasts a long time it is evident that this must entail a very considerable strain and a very considerable possibility of failure.	A basin of 1 in 2000 sublimate solution is at hand in which the hands and instruments are rinsed from time to time. In this way accidental contamination is rectified. The few drops of sublimate solution which may enter the wound in these circumstances are quite insignificant and are probably at once completely neutralised by the blood present in the wound, and as a matter of fact do not produce any noticeable irritation.

SPONGES.

Surgery without Antiseptics.	*Limited Use of Antiseptics.*
Dry swabs which have been steamed or boiled and dried are employed. Here everything depends on the completeness of the sterilisation and on the avoidance of contamination during the operation.	If swabs are used they are disinfected by heat and subsequently placed in a 1 in 2000 sublimate solution and wrung out as required. Here the sterilisation is the same, but the risk of contamination during a prolonged operation is diminished from the fact that the sponges are lying in an effective antiseptic solution till required for use.

For my own part I still employ marine sponges. These cannot be boiled, but they can be thoroughly disinfected if kept in carbolic acid (1 in 20) for several days, the solution being changed frequently and then during the operation they are kept in a 1 in 2000 sublimate solution and wrung out as required. I see no reason whatever why marine sponges should not be employed. I presume that they were given up in the first place because they could not be disinfected by heat and in the second place because they were supposed to be the source of contamination which evidently occasionally occurred. One must not, however, get into the habit of thinking that heat is the only possible method of disinfection and practical experience shows that the method which we employ of disinfecting these sponges by prolonged immersion in a strong carbolic acid solution is perfectly satisfactory. That being so no one will doubt the advantage of sponges over swabs as a means of removing blood from a wound. But apart from the advantages of marine sponges I consider that swabs are really a very considerable source of danger. In the first place, one must be quite sure that they are properly sterilised and unless the surgeon or an assistant whom he can trust does that he is very likely, as I generally am, to be offered swabs which are either not sterilised at all or have been only imperfectly treated. Now, if they are imperfectly sterilised or if any mistake in the bacteriological methods takes place during the operation the swab becomes a source of great danger, because however carefully prepared there is always not only the possibility but the probability of threads of wool being detached from the swab and left behind in the wound. As long as these threads are aseptic they do not matter, but if they become infected they, like the stitches, become sources of irritation and prevent healing.

STITCHES.

Surgery without Antiseptics.	*Limited Use of Antiseptics.*
Only materials which can be sterilised by heat are employed, and apparently great trouble is taken in sterilising these ligatures. Apparently, also, in the practice of many surgeons catgut is entirely given up and the use of silk is diminished as far as possible. Indeed, some surgeons instead of employing silk to bring together the edges of the wound have given that up and fix the edges together by metal clamps. The ligatures after removal from the steriliser are placed in salt solution till required.	On the other hand, we employ catgut for all purposes for which we formerly used it and have no hesitation in burying silk, silkworm-gut, &c. Any of these materials which can be disinfected by boiling we disinfect in that way and subsequently keep them till required for use in 1 in 20 carbolic acid solution. As catgut cannot be easily sterilised by boiling, we generally treat it by prolonged immersion in repeated changes of 1 in 20 carbolic lotion. I generally immerse the catgut in pure carbolic acid in the first instance for about 24 hours, and then subsequently in 1 in 20 carbolic lotion. The ligatures, like the instruments, are rinsed in 1 in 2000 sublimate solution before use.

By giving up catgut it seems to me that surgeons have lost one of the most important advances in wound treatment, and I regard the giving up of buried sutures for uniting divided muscles, &c., as an extremely retrograde step. Apparently, the reason why catgut was given up was that as suppuration still occurred in the wound and as catgut as it comes into the surgeon's hands is a septic material the suppuration was attributed to the catgut. But as a matter of fact, in my experience there is no real difficulty in the disinfection of catgut; and as regards silk, which is now held to be guilty of many of the septic accidents which occur, I cannot conceive what there is in silk which should make sterilisation more difficult than in the case of swabs, gauze dressings, &c. There is this, however, in silk that explains the difficulty—namely, that if a wound becomes infected the silk, being an inert material and being soaked with putrescible substances, forms a favourable nidus in which the bacteria can multiply and ultimately infect the whole wound. On the other hand, a wound which does not contain any inert putrescible material may be able in some cases to get rid of a considerable number of pathogenic organisms provided that they are not particularly virulent, and so the wound will heal by first intention. It is not imperfect sterilisation of these materials which is the

trouble—it is that they are present in a wound to which bacteria have been admitted by the employment of imperfect bacteriological methods.

DRAINAGE OF THE WOUNDS.

Surgery without Antiseptics.	*Limited Use of Antiseptics.*
No drainage is required unless in exceptional circumstances. Then what are called gauze wicks, little twisted pieces of gauze, are left in the wound.	No drainage is required unless in exceptional circumstances. In that case the use of a suitably-sized drainage-tube is most efficacious.

In this respect there is no difference except that for some curious reason those who practise aseptic surgery prefer to introduce a piece of gauze into their wounds as a drain instead of a drainage-tube. It is a fact that years ago Lord Lister not uncommonly employed capillary drainage in cases where he did not expect any great amount of discharge and he carried that out by introducing strands of catgut, horse-hair, silkworm-gut, &c., into one corner of the wound and pulling them out in a few days when the drainage was no longer necessary. At the present time the exudation is much less and drainage is chiefly necessary only in cases where a cavity is left under the skin where the deep surfaces do not come together. In such circumstances I can see no advantage whatever in the employment of gauze over a drainage-tube. On the contrary, I think that the serum will be more readily carried away by a small tube. That, however, is purely a matter of fancy of the surgeon. But the question is different when the drainage is carried out in suppurating cavities or in the case of septic wounds. In suppurating cavities the employment of gauze wicks is, to my mind, a very objectionable procedure. The capillary drainage does not act when thick fluid like pus has to be removed and if gauze wicks are introduced into an abscess cavity they not only do not allow the pus to escape properly, at any rate not nearly so efficiently as a drainage-tube would, but, becoming themselves soaked with the pus, they form septic foreign bodies which interfere with the healing of the wound and tend to keep up sepsis. I have on several occasions had cases of septic wounds referred to me which would not heal and which I found were being drained by gauze wicks. Healing was at once obtained on dilating the opening, removing the gauze wick, and introducing a drainage-tube.

DRESSINGS.

Surgery without Antiseptics.	*Limited Use of Antiseptics.*
The dressings consist of sterilised gauze or wool without any antiseptic in them. They are disinfected by heat in metal cases which are not opened till the material is required. No doubt the dressings so applied, provided the hands and skin are aseptic, are quite satisfactory from the aseptic point of view.	The dressings consist of sterilised gauze or wool containing antiseptics stored up in them. The method of sterilisation does not materially matter although I generally sterilise gauze in antiseptic solution. The stored-up antiseptics which one generally employs are the double cyanide of mercury and zinc, salicylic acid, &c. These substances becoming mixed with the blood which escapes from the wound render it, for a time, at any rate, incapable of decomposition.

I can see no logical reason whatever for giving up the use of antiseptic substances in the dressings. The antiseptics contained in the dressings, provided they are not of an irritating nature, can do no harm. They cannot possibly affect the wound itself, through the closely stitched line of incision, while on the other hand they possess a great advantage over simple sterilised materials on the principles which led Lister to employ them. It is true that if the skin is aseptic and the wound is left aseptic and an aseptic dressing containing no antiseptic is applied decomposition will not occur so long as the discharge does not reach the surface, because the wool or gauze will act as a filter to the dust. But so soon as the exudation reaches the surface of the dressing the bacteria will multiply in it rapidly, spread up to the wound, and may then infect the skin stitches and from the skin stitches the wound itself. On the other hand, if the dressing contains an antiseptic material which, when dissolved in the blood and serum which ooze into the dressing, prevents their undergoing at any rate a rapid decomposition, the fact of the discharge coming through the dressing does not necessitate immediate change of the dressings, nor does the sepsis spread back to the wound. I see no reason whatever why the aseptic dressings applied over the wound should not contain an antiseptic which is unirritating to the skin and which adds such a great advantage to the dressing.

It will thus be seen that after all there is comparatively little difference between the two methods employed, but such differences as exist will help very much to correct unconscious errors on the part of the surgeon or his assistants, while the training of these assistants and of the nurses in these methods will, I believe, leave a very lasting and thorough impression on their minds.

The Harveian Lectures

ON

FIBROIDS OF THE UTERUS AND ITS LIGAMENTS CONSIDERED FROM A CLINICAL AND SURGICAL STANDPOINT.

Delivered before the Harveian Society of London on Nov. 6th, 13th, and 20th, 1902,

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LECTURE I.

Delivered on Nov. 6th, 1902.

MR. PRESIDENT AND GENTLEMEN,—In calling upon me to deliver these lectures you have conferred upon me an honour which I deeply appreciate and for which I most sincerely thank you. I have chosen for their subject certain questions of clinical and surgical interest in relation to fibro-myoma of the uterus and its ligaments and my remarks will be mainly based on my own experience. The different subjects will, no doubt, appear to you rather disconnected, but you will not expect me to deliver a systematic course of lectures on a subject so well known as the pathology, diagnosis, and treatment of uterine fibroid disease.

On the pathology of fibroids I need not say much, as we all know that a tumour of this class is essentially a myoma and contains more or less white fibrous tissue. The surgical anatomy of fibroids of the uterus and its ligaments is a matter of more pressing interest. Demonstrations of the anatomy of the triangles of the neck and of the structures concerned in hernia are very familiar to us. We who have to diagnose and to treat abdominal and pelvic tumours and are sometimes called upon to remove fibroids ought to make clear the anatomy of the parts concerned both in their origin and their development. On that account I shall first direct your attention to the surgical anatomy of the broad ligament and to the seat of origin of fibroid tumours associated with it. Next I shall turn to my own experience as to the treatment of the ovaries when the uterus is removed for fibroid diseases and say some words on the question of removal of the ovaries as a remedy in cases of that disease—an operation which still has distinguished advocates, as we learnt last summer at Manchester. Then I will say something on some more or less purely clinical subjects in association with fibroid disease—namely, family history, hæmorrhage, absorption (another matter that was talked about at Manchester), ascites, necrotic changes, "cup-and-ball" fibroids, disease of the appendages associated with fibroids, and, lastly, large vessels and the souffle in fibroids. The concluding lecture will consist of my views and experience as to several surgical questions—namely, the management of capsules, adhesions in fibroid disease, post-operative ileus in hysterectomy, rupture of the abdominal wound, and cancer of the stump. I shall terminate with some observations on the danger of pushing impacted fibroids out of the pelvis. You can now see beforehand that I shall not dwell on many subjects pertaining to uterine myoma and its treatment. I shall omit all mention

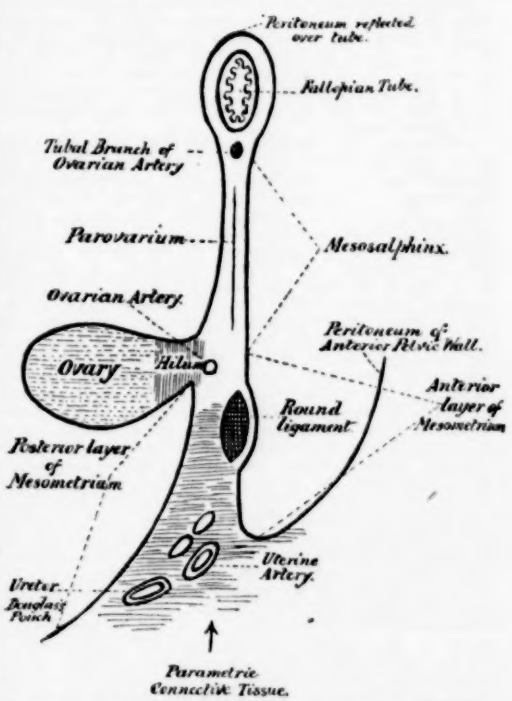
of those subjects, not only because I have not sufficient time to discuss them, but also because they have been so much talked about of late that some other matters, I mean those on which I intend to dwell, will probably interest you more or at the worst weary you less. For the most recent opinions about the more important subjects which I cannot discuss—namely, prognosis of fibroids, expectant treatment, and the merits of different operations—I refer you to the well-known writings of Dr. F. H. Champneys,[1] Dr. C. J. Cullingworth,[2] Dr. M. A. D. Scharlieb,[3] and Mr. E. Stanmore Bishop,[4] and to the recent discussion on total abdominal hysterectomy at the Manchester meeting of the British Medical Association.[5]

THE SURGICAL ANATOMY OF THE BROAD AND OVARIAN LIGAMENTS.

Since the establishment of pelvic and abdominal surgery a great deal has been written by Sir F. Treves, Mr. C. B. Lockwood, and others about the folds of the peritoneum. In dealing with fibroids, clinically or surgically, we have specially to consider one fold, the broad ligament, and certain other bands, also dignified by the name of ligament, in its vicinity. The more thoroughly we understand these folds and bands the better. The literature of the broad ligament is already very voluminous, but it has up to the present been mainly devoted to the question of burrowing cysts and extra-uterine fœtal sacs, with which we are not directly concerned.[6] Still we make mistakes, or we may operate under conditions where diagnosis is uncertain, hence, whilst it is necessary for us to understand how fibroids may burrow into the folds of the broad ligament, it is also imperative for us to be aware what other kinds of tumour may be found insinuating themselves into these very same folds.

We all know how the peritoneum is reflected over the Fallopian tube. Meeting below it, the layers lie close together until they reach the level of the ovary. This reflexion is the upper portion of the broad ligament now universally known as the *mesosalpinx*. It contains the parovarium and an anastomosis of the uterine and ovarian arteries. Its connective tissue is scanty but loose, hence the Fallopian tube can be easily peeled off when its folds are opened up. The mesosalpinx is invaded by broad ligament cysts, by burrowing ovarian tumours, and also by many subserous fibroids of uterine origin that grow outwards. Last month when removing a large fibroid uterus I was puzzled by a swelling in the left mesosalpinx of the size of an almond. I had to open the posterior layer before I could apply a ligature to the broad ligament. Then I found a body like an extra-ovary, but Dr. C. H. J. Lockyer pronounced it to be a pedunculated subserous uterine fibroid. Se-sile fibroids of broad ligament origin do not, as a rule, develop in the mesosalpinx but rather in the mesometrium, presently to be described. Hence the tube, mesosalpinx, and ovary often lie unaltered on the top of a big fibroid of the broad ligament—a most characteristic appearance and a useful guide to the operator. I can show you, however, a specimen of a minute pedunculated fibroid attached to the posterior layer of the mesosalpinx. This specimen, to which I shall again refer at greater length, implies, I believe, that even a sessile fibroid independent of the uterus may develop in the mesosalpinx.

Owing to the small amount of connective tissue which it contains the mesosalpinx is not so much involved in parametritis as is the lower part of the broad ligament and it bears manipulation and ligatures much better. It includes in its folds large lymphatic vessels which when obstructed, as frequently happens in cases of large uterine fibroids, appear as irregular yellow bullæ, sometimes concealing the Fallopian tube so as to confuse the relations of the tumour. A branch of the ovarian artery which anastomoses with the uterine runs in the mesosalpinx close under the inner half of the tube. When the ligature slips from the inner part of a pedicle after removal of an ovary it is this artery which bleeds and in enucleating a uterine fibroid which has opened up the mesosalpinx the same vessel is cut or torn. It bleeds very sharply but is easily secured. In concluding these observations about the mesosalpinx I must add that the



Vertical section through the broad ligament showing relations of mesosalpinx and mesometrium, as distinguished by Waldeyer.

operator should remember that when the fibroid burrows in the mesosalpinx the tube will lie stretched in the tumour, as in the case of parovarian cyst, whilst when it opens up only the lower part of the broad ligament, now to be described, the mesosalpinx and tube will project from the upper surface of the tumour.

Posteriorly the ovary projects into the peritoneal cavity, anteriorly the round ligament, in its course from the uterus to the inguinal canal passes under the anterior layer of the broad ligament. Below the level of the ovary the broad ligament is best distinguished by the name *mesometrium* sanctioned by Waldeyer.[7] The layers of the mesometrium as they descend part widely, the gap being filled by the parametrium, part of the pelvic connective tissue. The anterior layer soon turns sharply upwards over the corresponding side of the bladder and pelvic wall, to become the parietal peritoneum of the abdomen. Hence this fold forms the lateral continuation of the utero vesical pouch. Its relation to the bladder is very important and is often greatly altered by fibroids which develop in the anterior part of the uterus and grow outwards. Broad ligament fibroids cause yet greater displacement of this fold. Hence in operating on such cases the surgeon must make sure where the fundus of the bladder lies. Even when the fold is normal the bladder may be found in abnormal relation to it. Tandler and Halban describe and figure a case where the bladder, otherwise normal, was invested by the layers of one broad ligament.[8]

When a fibroid of the broad ligament or uterus grows forwards and upwards, displacing this fold, it not only draws up the bladder on its anterior aspect but also insinuates

[1] An Address on Some Points in the Natural History of Uterine Fibroids, THE LANCET, Jan. 20th, 1900, p. 147.
[2] An Analysis of 100 Cases of Uterine Fibro-myoma, Journal of Obstetrics and Gynæcology of the British Empire, January, 1902, p. 3.
[3] An Analysis of 100 Cases of Fibro-myoma Uteri, ibid., October, 1902, p. 323.
[4] Uterine Fibro-myomata: their Pathology, Diagnosis, and Treatment, 1901.
[5] Herbert R. Spencer: Total Abdominal Hysterectomy (especially by Doyen's method) for Fibro-myoma Uteri, with Discussion, Brit. Med. Jour., Oct. 11th, 1902, p. 1131.
[6] See Capsules, False and Real, in Ovariotomy, Brit. Med. Jour., vol. i., 1898, p. 960; and On the Management of True and False Capsules in Ovariotomy, Transactions of the Obstetrical Society of London, vol. xxxix., 1897, p. 265.
[7] Das Becken, 1898.
[8] Topographie des weiblichen Ureters, Plates xxxi. and xxxii.

itself between the abdominal parietes and the parietal peritoneum. The same happens when a pelvic cyst and when a tubo-ligamentary pregnancy advances anteriorly, constituting the "anterior ligamentary pregnancy" of Taylor.[9] In all cases the tumour lies in front of the peritoneal cavity. The parietal peritoneum behind it protects it from infection from intestine.

I cannot understand why, in diagrams by Andersen and other anatomists of repute, drawings copied over and over again in text-books, the anterior layer of the broad ligament is represented as though it dipped down as low as the posterior. We all know that the posterior layer, which below the ovary forms part of the mesometrium, passes deeply downwards into the pelvic cavity to form the anterior part of Douglas's pouch.

Uterine and broad ligament fibroids sometimes grow backwards and upwards, displacing the posterior layer of the mesometrium. This complication, much more frequent than displacement of the anterior layer, brings the tumour into close relation with the ureter, vagina, and rectum, which may be adherent and therefore liable to damage at an operation. The neighbourhood of the rectum involves risk of infection, not so great, however, in the case of a fibroid as when an ovarian cyst or a tubo-ligamentary pregnancy[10] displaces the posterior layer of the mesometrium. The "posterior ligamentary pregnancy" of Taylor usually becomes septic. But though fibroids in the same position are seldom infected ligatures applied to the capsule after their enucleation are especially liable to infection. The mesometrium is the natural home, the seat of origin of most fibroids (fibro-myomata) of the broad ligament, which often do not open up the mesosalpinx even when they burrow extensively behind or in front of the peritoneum. Broad ligament cysts and ovarian tumours sometimes burrow in the mesometrium, after having already opened up the folds of the mesosalpinx; but I have noted instances where tumours of this class have, like a fibroid of the broad ligament, opened up the mesometrium alone, the tube and mesosalpinx lying free on the top of the tumour.[11] A fibroid of the body of the uterus or of the cervix not rarely opens up the mesometrium. Enucleation in these circumstances is specially difficult. The parametrium, so abundant in the mesometrium, is subject to parametritis, either as the familiar "pelvic cellulitis" of childbed or as the inflammatory affection which sometimes follows hysterectomy through bruising of the tissues or from the irritation of ligatures. The ureter and uterine vessels run in the lower part of the mesometrium. We know how the utero-sacral ligaments, which contain plain muscle fibres, form a kind of edge laterally to Douglas's pouch beneath them. They may cause the incarceration of a small ovarian tumour, a painful complication,[12] and I have found pedunculated fibroids springing from the back of the uterus similarly incarcerated, the uterus being drawn back. I fancy, therefore, that they sometimes account for the pain caused by small tumours which occupy Douglas's pouch. These ligaments may damage a backward-displaced uterus by gripping it, but the amount of harm thus done is questionable. A fibroid may develop in one of the utero-sacral ligaments.

I now desire to turn special attention to a structure the importance of which has been underrated, I mean the *ovarian ligament*. It is a fairly stout band of fibrous and plain muscular tissue which runs from the uterus to the ovary, causing a slight elevation of the posterior layer of the broad ligament. It is quite short, usually under an inch in length, but I have seen it nearly two inches long even when attached to a normal ovary. The surgeon, for obvious reasons, should remember that for practical—that is to say, pedicle-making—purposes it is short. In cases of ovarian cyst, with which we are not directly concerned, it is elongated, but in fibroid disease of the uterus it usually remains short. Histologically, and therefore anatomically, it is part of the uterus; it is a fibro-muscular structure liable to become the seat of a fibroid, a true fibro-myoma. This specimen shows this form of tumour in a very early stage and more will be said presently about fibroma of this ligament. Such a growth is more than a pathological curiosity. I shall have to speak of large ovarian ligament tumours. But such morbid growths are rare. It is much more important for the surgeon to remember that a piece of detached ovarian tissue is occasionally to be detected in the ovarian ligament close to the uterus. Operators of repute, such as Dr. Murdoch Cameron and Mr. Furneaux Jordan, still advocate oöphorectomy for the cure of fibroids, but I will show on the other hand that it is hard to remove all ovarian tissue in that operation owing to the nature of the ovarian ligament.

In July, 1901, I removed a large bleeding fibroid from a woman, aged 41 years. I sacrificed both ovaries as they were undergoing suspicious cystic degeneration. It happened, as is usually the case when an ovary is cystic, that the ovarian ligament was elongated; this was noted on both sides. Dr. Lockyer examined the uterus and its appendages after the operation and found a distinct piece of ovarian tissue or "accessory ovary" in one ovarian ligament, close to the uterus. The patient recovered and the period was completely suppressed, not without very troublesome flushings. Had the case come under my care 15 years earlier I should probably have removed the ovaries alone. Then the bleeding would almost certainly have continued as the "accessory ovary" would have lain in the pedicle. The occasional presence of ovarian tissue in the ovarian ligament and the natural shortness of that band need our serious consideration. For it is, as a rule, impossible to remove the normal ovary entire with intent to check hæmorrhage from a fibroid or to prevent its further growth. The ovarian ligament is often hard to reach and if cut short after ligature there would be great risk of slipping of the silk and fatal hæmorrhage, whilst if cut long some ovarian tissue will be left behind and the object of the operation will be frustrated. Whilst it is so difficult to remove all ovarian tissue with safety, and to leave the fibroid uterus behind, there is no difficulty in taking away the ovaries entire at a hysterectomy. They come away complete, attached to the uterus by the ovarian ligaments. It is the outer, not the inner, attachments of the ovaries that are divided in that case. The outer attachment of the ovary is the infundibulo-pelvic ligament, bearing the ovarian vessels, which does not contain detached portions of ovarian tissue and is readily divided at a point far external to the limits of the ovary. Hence, when an ovary seems diseased, there need be no hesitation in removing it with the fibroid uterus. Nor, on the other hand, is it difficult or dangerous to leave an ovary when the uterus is removed. In that case the broad and ovarian ligaments are ligatured with the tube internal to the ovary and divided on the uterine side of the ligature which will hold well; the vessels on its distal side give no trouble after the big vascular uterus has been removed. Let it be noted how different is the case when the ovarian ligament is ligatured, the ovary cut away, whilst the fibroid uterus full of large vessels is left behind.

FIBROID OR FIBRO-MYOMA OF THE BROAD LIGAMENT.

Fibroid tumour of the broad ligament has been shown by recent experience to be anatomically and surgically, though not pathologically and clinically, a disease distinct from fibroid of the body and cervix of the uterus. When of large proportions the proof that the tumour was not originally uterine may be contested. It happens, however, that several small broad ligament fibroids have been detected at operation or after death lying far from the uterus and separated from that organ by a wide tract of the parametric connective tissue. Streeter[13] removed a tumour of this kind weighing 10 ounces from the right broad ligament and I have recently reported a case[14] where I took away a large multilocular cyst of the left ovary and then found beneath it a very heavy little tumour, smooth, oval, and two and a quarter pounds in weight. It was enucleated with the greatest ease from the parametrium and was perfectly distinct from the uterus; it was made up of plain muscle cells and white fibrous tissue. Vessels had to be secured in the parametrium, but no part of the uterus was wounded or ligatured and recovery was speedy.

These broad ligament fibroids are really retro-peritoneal. For clinical reasons I may note that Mr. Marmaduke Sheild

[9] Extra-uterine Pregnancy: A Clinical and Operative Study, p. 77. Also called "sub-peritoneo-pelvic" or "sub-peritoneo-abdominal pregnancy." As the tumour lies away from intestine the chance of infection is slight.

[10] Taylor: loc. cit. This variety is the "posterior ligamentary" or "retro-peritoneal" pregnancy of that author.

[11] See Capsules, False and Real, in Ovariotomy, with notes of six cases, loc. cit., Fig. 3, No. 4.

[12] See Case 1 in my note on Ovarian Tumours simulating Inflamed Ovaries, Edinburgh Medical Journal, vol. iii., New Series, 1898, p. 450.

[13] American Journal of Obstetrics, vol. xxi., p. 211.

[14] Fibroid of Broad Ligament associated with an Ovarian Cyst. Transactions of the Obstetrical Society of London, vol. xliii., p. 260. The specimen is in the Museum of the Royal College of Surgeons of England (Pathological Series, A.4590, A. a).

has reported a case of retro-peritoneal *fibroid* which he admits may have been of uterine origin.[15] It lay behind the mesentery, the position where large retro-peritoneal *lipomas* develop. Now it happens that Sir Frederick Treves describes how he removed a *lipoma* from the broad ligament where we usually find *fibroids* of the kind which we are now considering.[16] These rare conditions must be borne in mind when we attempt to diagnose a doubtful abdominal swelling.

There remains one more subject of clinical and surgical importance in relation to fibroid of the broad ligament as a retro-peritoneal tumour. That class of morbid growth seems related to congenital displacement of the kidney. Retro-peritoneal lipoma, properly so-called, excluding lipoma of the omentum and broad ligament, is very rare. Yet in one case which occurred in my own operative practice[17] the right kidney lay on the brim of the pelvis, its vessels being apparently derived from the common iliac artery and vein. Thus displacement of the kidney was detected in one out of about 30 reported cases of the most typical form of retro-peritoneal tumour. Turning to fibroid of the broad ligament, a less typical form, but pathologically retro-peritoneal, let it be noted that out of 39 cases which I have tabulated and published[18] in one there was a pelvic kidney. The surgeon may as well remember that a kidney may lie much lower down than he suspects, so that he must be cautious while enucleating a fibroid of the broad ligament.

The surgical anatomy of a broad ligament fibroid is of much more importance to us than its pathology. The tumour usually lies at first between the folds of the mesometrium. It is, as a rule, sessile, but it may be pedunculated. Whilst the mesometrium is always involved the mesosalpinx is seldom opened up, nor does this kind of tumour commonly originate between its folds which, unlike the mesometrium, include but little connective and muscular tissue. This specimen, to which I have already referred, shows that a broad ligament fibroid may be pedunculated and also that it may be connected with the mesosalpinx. Hence it is just possible that a sessile fibroid might originate in that part of the broad ligament. The specimen comes from the museum of the Royal College of Surgeons of England[19] and is thus described: "A left broad ligament exhibiting a small pedunculated myoma, which is attached to the posterior surface of the mesosalpinx near the hilum of the ovary, *but unconnected with its ligament*. From a middle-aged woman who had several pedunculated fibro-myomata attached to the serous surface of the fundus uteri." It was found in the College stores. The fibroid is so small that its relations are evident—its pedicle has no connexion with the uterus, the ovary, or the ovarian ligament. The great majority of broad ligament fibroids, however, are sessile tumours developing in the mesometrium. The manner in which they open up that fold, push the intact mesosalpinx upwards, and come to lie in close relation with the bladder, ureters, and rectum has been already explained when I spoke of the surgical anatomy of the mesometrium which must be thoroughly understood by all who attempt operations on pelvic tumours. The perils of operative interference due to these relations are self-evident. The rectum or ureters may be strongly adherent to the tumour and in all cases the parametric tissue is bruised. This tissue does not always tolerate ligatures, which are liable to infection from the neighbouring bowel. The surgeon operating on a broad ligament fibroid must remember, on the other hand, that he has not to face other dangers inevitable when an equally large fibroid of the uterus itself is removed. In that case the cervix is often thick whilst the uterine cavity is dilated and lined with unhealthy endometrium. When the fibroid is confined to the broad ligament the uterus is usually small and flattened; it may be left behind as in the case where I removed a small tumour with an ovarian cyst, or if advisable it may be removed with little addition to the risk of the operation.

Such is the surgical anatomy of these tumours; but before speaking of treatment more must be said about the tumours themselves from a clinical standpoint. They are proportionately much more frequent in young women than is any form of fibroid of the uterus and cervix proper. According to my own tables 17·6 per cent. were observed in patients under 30 years of age. In one instance a fibroid of the broad ligament weighing over 18½ pounds was removed from a girl, aged 19 years; in another a tumour weighing 11 pounds was removed from a young woman, aged 22 years. In a case where I operated the tumour was first observed already large when the patient was 23 years of age and it grew to enormous proportions in five years. On the other hand, fibroid of the broad ligament may appear after the menopause and, just as very big tumours have been found in young subjects, so very small growths of this class have been discovered in old women either at an operation or after death from some other disease. They may certainly take on growth after the menopause. It is interesting to find that, as in this kind of tumour, true fibroma of the ovary is not rarely seen in girlhood and in age[20] as well as in the mature. This fact is of importance with respect to diagnosis.

We find anæmia not rarely in cases of fibroid of the broad ligament and it is of serious import otherwise than is the anæmic condition constant in bleeding uterine fibroids. The anæmia in broad ligament fibroid is secondary to bad health. The impaired health may be due to the bulk of the tumour or to pressure effects on the vessels, bowel, and ureters or to necrotic changes in the substance of the new growth which, just as when they occur in uterine fibroids, make the patient sickly. When menorrhagia is present in a case of broad ligament fibroid there is probably a fibroid or polypus in the uterus as well.

The sessile fibroid of the broad ligament may attain a great size. As it is fixed it gives little trouble at first; it does not irritate the peritoneum by rolling about, nor does it worry the patient by setting up uterine hæmorrhage. Ascites is not a common complication. When it grows to its full proportions, however, it is apt to cause grave pressure effects, whilst its maintenance is a tax on the patient. Ureteral obstruction may prove fatal even in cases where the tumour has not risen above the pelvic brim and has been overlooked during the patient's life (Gouget). Emaciation and anasarca of the lower extremities are extremely common. The larger tumours of this class range from 10 to over 40 pounds in weight.

The diagnosis of a fibroid of the broad ligament is not always difficult. When the tumour is distinctly solid and sessile and the abdominal walls are thin the outline of the uterus on the anterior surface of the tumour can be defined or even seen. The uterus can sometimes be slid about laterally on the tumour. The cervix lies high, close under the pubes, and is not rarely inaccessible.

In most cases diagnosis is difficult as the outline of the uterus cannot always be made out and the sound cannot in every case be passed owing to the elevation of the cervix and its compression against the pubes. Indeed, it is not always easy to make out by dissection after the operation that the tumour has developed independently of the cervix. This section shows how doubtful the origin of the fibroid may be. I removed this tumour three years ago with satisfactory results. One half is in the museum of St. Bartholomew's Hospital, the other in the museum of Charing Cross Hospital. I think that the tumour might have arisen in the parametrium behind the cervix. The practical importance of this question is clear—a broad ligament fibroid may sometimes be enucleated and the uterus spared; in fibroid of the cervix this cannot be done. It is a serious thing to remove the uterus of a young woman. The diagnosis of a soft or cystic sessile broad ligament fibroid is difficult even when the uterus can be clearly defined; it then closely resembles certain sessile tumours of ovarian or parovarian origin. Pedunculated fibroids of the broad ligament are usually impossible to diagnose from subserous fibroids attached to a uterus otherwise but little enlarged, or from fibroma of the ovary.

The treatment of fibroid of the broad ligament should, I believe, be surgical in any case. A sessile tumour of this class is not likely to be harmless, after the fashion of many a fibroid uterus lying high above the pelvis and freely moveable. The dangers of operation steadily increase with the size of the tumour. The removal of a sessile broad ligament fibroid of any size demands careful enucleation.

[15] A Case of Large Solid Tumour removed with success from the Retro-Peritoneal Space, Transactions of the Royal Medical and Chirurgical Society, vol. lxxx., p. 205.

[16] A Case of Lipoma of the Broad Ligament, Transactions of the Clinical Society of London, vol. xxvi., p. 101.

[17] Retro-peritoneal Lipoma weighing 13 pounds 12 ounces, Journal of Obstetrics and Gynæcology of the British Empire, September, 1902, p. 244.

[18] Transactions of the Obstetrical Society of London, vol. lxi., p. 188, Case 7.

[19] Museum of the Royal College of Surgeons of England (Pathological Series, No. A. 4590).

[20] I have removed a fibroma of the ovary (weight 4 pounds 11 ounces) from a girl, aged 20 years, and another weighing 3 pounds from a woman, aged 52 years.

A small tumour of this class may be shelled out of the broad ligament, then, after the securing of all bleeding points and the uniting of the cut edges of the broad ligament by suture, the abdominal wound can be closed. Thus the uterus is saved.

When the tumour is large enucleation is difficult. The necessary steps and precautions must be considered in detail. Not only must asepsis be assured, but measures must be taken to anticipate or to minimise shock and hæmorrhage. No attempt should be made to draw the lower part of the tumour out of the pelvis by a sharp tug or by firm traction—such a manœuvre may cause laceration of the capsule and some of its vessels and damage to adherent rectum, bladder, or ureter. The capsule must be divided first, but as the trunks of the ovarian and uterine vessels are very inaccessible, their preliminary ligature cannot always be effected. Therefore, the operator should never make a horizontal incision around the entire circumference of the tumour and then attempt rapid enucleation. Dangerous hæmorrhage would certainly ensue, however quickly and dexterously the enucleation be performed, even if the large vessels be caught on both sides, immediately after their division, by assistants. Each vessel on the surface of the capsule must be secured by ligatures at two points about three inches apart. These ligatures can be passed under the vessels by means of blunt-pointed pedicle needles. Then the capsule should be divided horizontally between the ligatures for two or three inches. The threads are drawn tight by assistants as the vessel is being divided. When all the vessels on the surface of the capsule have been thus secured, the horizontal incisions can be joined so that the capsule is entirely divided. Then the lower part of the tumour can be enucleated. The operator should never trust to pressure forceps when dividing the vessels on the capsule. The enucleation demands all the well-known precautions required when a fibroid of the uterus proper is enucleated. Bladder, rectum, ureter, and other structures may be damaged by hurried, rough enucleation. As for the vessels running into the tumour the pressure forceps applied at two points is useful at this stage. The vessel is divided between each forceps. That instrument, unsafe when applied to vessels on the convex capsule before enucleation, is very convenient for securing vessels running across the space created by the separation of the tumour from its attachments to the capsule.

When the uterus is small and the tumour large it is advisable to amputate the body of the uterus above the cervix so as to take it away with the fibroid. The capsule may be closed as when the tumour is uterine. Sometimes drainage or gauze-packing is safer, especially as regards certain after-results of the operation. I intend to say more about the management of capsules in hysterectomy and allied operations.

Of cases in my own practice one of the biggest, though by no means the heaviest, was observed in a woman, aged 44 years, who had borne three children, the youngest being 14 years of age. She had suffered from swelling of the abdomen for over three years and it had recently increased in size. The period appeared every three weeks and of late had lasted for about a week, but the show of blood was trifling. Mr. T. A. Mulcahy of Portsmouth detected an elastic solid tumour which reached to the epigastrium and came down low in the pelvis. I found that the os was drawn up too high to be reached, whilst the outline of the body of the uterus could plainly be felt above the pubes, sliding on the tumour. The catheter showed that the bladder was drawn up to the right groin. I operated and managed to deliver the greater part of the tumour through a long abdominal wound. The vessels on the capsule, much enlarged, were tied in two places as described above. Then the capsule was divided horizontally and the fibroid enucleated, the uterus was removed, and the stump was treated intra-peritoneally. In this instance I was able to trim away much of the capsule; the edges of the remainder were sewn together. The tumour was a very bulky fibro-myoma weighing 9 pounds 13 ounces; it had opened up the mesometrium, whilst the mesosalpinx lay intact with the tube and ovary on the top of the growth. The patient recovered. In this case the capsule, though thick, was not tensely stretched, and so its vessels were easily secured though enormously dilated. One big vein from the pampiniform plexus ran free from the infundibulo-pelvic ligament to the top of the tumour, the tissue connecting it to the broad ligament having been absorbed. This condition is more common in the dilated vessels of adherent omentum. The capsule was easily pushed down so as to allow the bladder to fall to its normal level.

The largest fibroid which I have removed weighed 44½ pounds. It was in this instance that careful ligature of the vessels in the capsule, in the manner already described, proved so satisfactory. Scarcely a drop of blood was lost. The patient gained flesh markedly after the operation, which took place in the autumn of 1898. One case, in a woman, aged 40 years, ended fatally. The tumour was in part cystic and unfortunately had been tapped and drained three years before I operated. The cystic cavity discharged quantities of blood through the drainage-track and was very septic, and small intestine adhered firmly to the surface of the tumour. Pedunculated fibroids of the broad ligament are as a rule easily removed, but the pedicle may be thick and fleshy and great care is always needed to prevent hæmorrhage. Every bleeding point in the cut surface must be secured and the cut edges of the serous investment of the pedicle sewn over the raw surface. When very thin, transfixion and ligature, as in ovariotomy, may be sufficient.

In these lectures I have endeavoured to confine my remarks as much as possible to my own experience. In relation, however, to the question of pedunculated fibroids independent of the uterus, I must here relate the instructive experience of Rosenstein,[21] who removed a fibro-myoma of the right utero-sacral ligament. The patient was 46 years of age. The tumour was of "about the size of a man's head," tense, and freely moveable. It was diagnosed as a multilocular ovarian cyst. On one occasion, it is interesting to learn, the patient had a sharp attack of pain so that torsion of the pedicle was reasonably suspected. At the operation the tumour was found to be perfectly free from the uterus but continuous with the middle of the right utero-sacral ligament by a distinct pedicle as thick as a lead pencil. It had no connexion with the Fallopian tube, ovary, ovarian ligament, or infundibulo-pelvic ligament. There was no difficulty in securing and dividing the pedicle which did not bear any large vessels. No doubt other cases of fibroid of the utero-sacral ligament have been overlooked or rather mistaken for tumours of different origin.

In conclusion, I have said enough to explain that a sessile broad ligament fibroid is a formidable kind of growth to remove and that its extirpation demands many precautions. I have already tabulated a series of operations on large tumours of this class.[22] It is fair to say that enormous fibroids of the uterus itself may be successfully extirpated. Thus in Dr. F. Cole Madden's case, recently reported,[23] the tumour weighed 53 pounds. The patient was an Egyptian girl, aged 18 years—very young to be subject to fibroid. The tumour originated in the anterior wall of the uterus which was at once lifted out of the abdomen when the incision was made sufficiently large. Such a manœuvre is impossible in the case of a broad ligament tumour. The patient was doing well according to the last report, six weeks after the operation.

FIBROID OF THE OVARIAN LIGAMENT.

I will now say a few words about an interesting type of tumour closely related to the common uterine fibroid, although surgically it is akin to a pedunculated ovarian growth. Many years ago I detected fibroid of the ovarian ligament in an incipient condition, thus proving its possibility.[24] Here is the specimen[25] and its relations are perfectly clear. Microscopically it was composed of well-formed plain muscular fibres mingled with white fibrous tissue. The tumour is plainly seen as a small spherical body about half an inch in diameter lying in the substance of the ovarian ligament midway between its uterine and ovarian extremities.

Two years later I myself successfully operated on a tumour pathologically the same but over 16 pounds in weight.[26] Since then similar tumours have been removed by other operators. Quite recently Dr. Lockyer in examining two

[21] Ein Fibromyom der Douglasfalte, Monatsschrift für Geburtshülfe und Gynäkologie, vol. xiv., 1901.

[22] Transactions of the Obstetrical Society of London, vol. xli.

[23] Hysterectomy for a Soft Fibro-myoma weighing 53 pounds, Brit. Med. Jour., vol. i., 1902, p. 70.

[24] Fibro-myoma of the Ovarian Ligament, Transactions of the Pathological Society of London, vol. xxxviii., 1887, p. 245. A microscopical drawing of the tumour will be found in the Transactions of the Obstetrical Society of London, vol. xxx., 1888, p. 413, Part I., Fig. 2.

[25] Museum of the Royal College of Surgeons of England (Pathological Series, No. 4644a).

[26] Fibroma of the Ovary and Ovarian Ligament, Transactions of the Obstetrical Society of London, vol. xxxviii., 1896, p. 184.

fibroid uteri which I had removed at the Samaritan Free Hospital for Women and Children found that in each there was a pedunculated fibroid of the ovarian ligament. One of these tumours I exhibit this evening. It is a firm, oval growth three inches in horizontal diameter, one and a half inches in vertical diameter, and two inches in antero-posterior measurement. The pedicle is very stout and about an inch in length. The base is attached to the uterine end of the ovarian ligament which appears to run from the pedicle to the ovary. Being pedunculated the tumour was very moveable and as it was also heavy the severe pelvic pain from which the patient suffered seems to be comprehensible. I noted similar pain in a case of myoma of the ovary and in another of fibroid of an undeveloped cornu; in all these cases a small heavy, very moveable tumour hung down in the pelvis. This tumour may be instructively compared with the minute specimen which I have already demonstrated. It is only through a minute sample like the latter that we can feel sure of the origin of a tumour as big as the former.

I am not surprised that when a careful observer like Dr. Lockyer studies fibroids he occasionally detects a growth of this kind connected with the ovarian ligament, for they are probably more frequent than is generally supposed. Still, as I have already observed, this other specimen[27] shows that a pedunculated fibroid may arise from the mesosalpinx quite independently of the ovarian ligament. The surgical importance of the distinction between a fibroid of the ovarian ligament and a pedunculated fibroid of the broad ligament is evident. When the tumour is of purely broad ligament origin the pedicle alone may be secured by ligature and divided and the tube and ovary saved. This conservative practice is not always safe when the fibroid springs from the ovarian ligament, though Doléris was able to save the adjacent appendages when removing an ovarian ligament fibroid. It is bad surgery to remove an ovary in the case of a girl or a young wife if the operator can save the organ without risk. Experience has shown that whilst a fibroid of the ovarian ligament manifestly demands removal its extirpation does not offer much difficulty to the surgeon. In my own case, notwithstanding its enormous bulk, the tumour was well pedunculated and I was able to secure its pedicle with ease, leaving the uterus. I considered, on the other hand, that it was safer to remove the tube and ovary.

Myoma of the ovary is probably derived from the muscular elements in the ovarian ligament and hence is anatomically uterine. In a case where I operated it was clearly a process of the ligament which seemed to run in between it and a cystic growth which involved the whole of the ovary proper. Though small, this myoma was exceedingly heavy[28] and caused pelvic pain so that inflammatory disease rather than a new growth was suspected. This kind of tumour is exceedingly rare and has nothing to do with fibroma of the ovary. As in the case of fibroid of the ovarian ligament, removal of a myoma of the ovary is surgically an ovariotomy. As a rule it proves very easy, for there are seldom adhesions, and the tumour, probably owing to its seat of origin, never seems to burrow into the folds of the broad ligament.

In concluding these observations on tumours of the ovarian ligament I must repeat what I remarked when demonstrating the anatomy of that structure. These rare fibroid tumours are of considerable interest, but it is much more important for us to remember that a piece of detached ovarian tissue is occasionally detected in the ovarian ligament quite separate from the ovary and sometimes very near the uterus. I further dwelt on the importance of these pieces of ovarian tissue in respect to the surgery of the ovaries.

THE ROUND LIGAMENT AND FIBROIDS.

When the uterus is distorted by fibroids the round ligament on one or both sides may undergo great hypertrophy. This change I have observed even when it was but little stretched. As a rule, of course, the hypertrophy is associated with stretching. There is a familiar feature of surgical importance in respect to the hypertrophied round ligament. I refer to the great increase in size of its artery. On that account the ligament should be secured with its artery separately during hysterectomy. This practice is advisable whenever the uterine fibroid is large and vascular; even when the round ligament has escaped hypertrophy I have found the artery of that ligament very large in such circumstances. When the removal of the fibroid cannot be effected quickly without risk one precaution essential in such circumstances is the ligature of the enlarged round ligament and its artery in two places followed at once by division. I know it to be dangerous to trust the distal end to a clamp. Some surgeons object to tying the round ligament separately when it has not shared in the hypertrophy of the parts of the uterus adjacent to the fibroid. One ligature, to include the ovarian vessels and the round ligament, may be sufficient in these circumstances when the broad ligament is also narrow and not involved in the growth. I cannot think, however, that the round ligament artery is safely secured in this manner; more than once I have seen it spout, after the division of the ligatured broad ligament, though the ovarian vessels did not bleed. In one case, after closing the flaps over the stump, I detected rather free bleeding from the artery of one round ligament which I at once secured.

The operator will always seek both round ligaments as landmarks when the precise seat of any pelvic tumour is uncertain. The round ligament is very useful when there is any doubt about a growth being tubal or uterine. As the text-books teach, it will spring from the outer side of a fibroid or hæmatometric tumour of a separate or ill-developed uterine cornu and will lie on the inner side of a tumour of the Fallopian tube or a tubal gestation sac. In the case of a tubal gestation sac the round ligament is always an excellent guide, whilst in oddly-shaped fibroids springing from the cornu the relation of the round ligament may be far from clear, as in one case in my own practice[29] to which I shall again refer in the course of my observations on necrotic fibroids. But in the majority of cases of fibroids in an undeveloped cornu the relation of the round ligament, usually much hypertrophied, is perfectly clear.

Fibroid tumours of the round ligament itself are of much interest, but differ greatly in clinical characters from similar growths in the broad and ovarian ligaments. The latter are closely allied to uterine fibroids, whilst tumours of the round ligament lie in very different anatomical relations, so that it is not necessary for me to dwell upon them.[30]

FIBROID IN AN UNDEVELOPED CORNU AND CONDITIONS WHICH SIMULATE IT.

Malformations of the uterine cornua are of much importance owing to the difficulties which they throw in the way of diagnosis and to the grave effects of the atresia which often accompanies them. Hence the bibliography of the subject is very extensive. It begins with reliable records published before the nineteenth century and ends with valuable recent work such as Josephson's[31] scientific monograph. An undeveloped cornu seems predisposed to the development of a fibroid growth in its substance and the author just quoted discusses at length this remarkable association of pathology and teratology. In a short note on the Removal of a Fibroid from a Uterus Unicornis in a Parous Subject,[32] published three years ago, I summed up most of the records of cases of this condition reported by contemporary authorities in this country.

Whenever we have to do with the abdomen and pelvis in a woman we must remember that deformities of the uterus are not exceedingly rare. When detected, we can never feel certain how far other parts of the genito-urinary tract may be normal or malformed. In the case of fibroid of an undeveloped cornu diagnosis may be easy, a thin band being detected on palpation between the uterus and the tumour, whilst the uterus, or rather half uterus, is small and strongly deflected to the side of the pelvis opposite to the new growth. In other cases, especially when the half uterus is well-developed through past pregnancies and lies centrally, diagnosis is often impossible. Again, a normal uterus has been suspected to be bicornute or to consist of one cornu and

[27] Museum of the Royal College of Surgeons of England (Pathological Series, No. A4590).

[28] Museum of the Royal College of Surgeons of England (Pathological Series, No. 4532 A a).

[29] Lockyer and Doran: Sloughing Fibroid of the Left Uterine Cornu; Abnormal Relations. Transactions of the Obstetrical Society of London, vol. xliii., 1901, p. 272.

[30] For records of fibroids and other tumours of the round ligament consult Sänger: Archiv für Gynäkologie und Geburtshülfe, vol. xxi., p. 279; J. A. Amann: Zwei Fälle von Fibromyoma Ligamenti Rotundi. Monatsschrift für Geburtshülfe und Gynäkologie, vol. xiv., p. 6; Frigyesi: Fibrosarcoma Ligamenti Rotundi, Centralblatt für Gynäkologie, No. 31, 1902, p. 830; Lichtenstein and Herrmann: Zur Pathologie des runden Mutterbandes, Monatsschrift für Geburtshülfe und Gynäkologie, vol. xv., 1902, p. 414; Vassmer: Zur Pathologie des runden Mutterbandes und des Processus Vaginalis Peritonei, Archiv für Gynäkologie, vol. lxvii., 1902.

[31] Ueber die Neoplasmen der missgebildeten Gebärmutter, Archiv für Gynäkologie, vol. lxiv.

[32] Brit. Med. Jour., vol. i., 1899, p. 1389.

most of us have come across doubtful cases of this kind. Extreme lateral displacement of the body simulates uterus unicornis. The mistaking of a normal for a bicornute uterus is possible in certain conditions when the patient is pregnant. Paul Bar [33] observed a case where in early pregnancy there seemed to be a soft tumour containing the fœtus and attached to a firm uterus; between the two there was a certain amount of mobility. Yet the pregnancy proved to be perfectly normal. I relate this condition because the hard part of the uterus may be taken for a fibroid complicating pregnancy; I once witnessed the opening of the abdomen by an able operator who practised midwifery. Cornual pregnancy with fibroid disease of the uterus was suspected. Yet the pregnancy was normal; the uterus was found to be less bilobed than it felt; it became quite regular when it emptied itself a few days later. Bar reminds us that in these cases the ovum has become attached to the uterine wall close to the orifice of one tubal canal so that the adjacent part of the uterus develops at first much more rapidly than the remainder. After the middle of pregnancy the rest of the uterus undergoes softening until the normal condition is attained. I am speaking, however, of fibroid in an undeveloped cornu rather than of cornual pregnancy; the above observations were simply made to warn us against diagnosing the coexistence of these two interesting conditions when it happens that neither is present. When, then, this combination of two conditions, each frequently associated with malformed cornu, is suspected we must watch the pregnancy for a month or two. Still, diagnosis may be uncertain. I recently operated on a most puzzling case where there was a bilobed tumour. A fœtus lay in the right lobe which reached to the hypochondrium, whilst there was a loud souffle over the left as well as over the right tumour. There was neither pain nor hæmorrhage and such is the rule in cornual as distinguished from tubal pregnancy. I operated and, as you see, the left tumour proved to be a very vascular fibroid springing by a broad base from the posterior aspect of the inferior segment of the uterus to the left. The left ovarian vessels were rotated forwards by the growth of the tumour and accounted for the souffle. The bilobed tumour before it was exposed simulated in some respects pregnancy coincident in a normal uterine cavity and in a closed cornu, in other respects pregnancy in a normal uterine cavity and fibroid tumour in a closed cornu. Pregnancy of tubal origin was improbable, though Taylor and others have reported cases without a history of pain. Without exploration diagnosis was impossible.

There is much of interest in considering fibroid disease of a badly developed cornu independent of pregnancy. I will put aside all cases of atresia where the fibroid becomes of secondary importance and only speak of cases where the opposite half of the uterus is normal. A small fibroid of this class lying loose in the pelvis may make itself known not so much by swelling and by the other conditions associated with a tumour as by pain and other symptoms indicating pelvic inflammation. In this respect it may resemble a small, heavy myoma of the ovary hanging down in Douglas's pouch. I happen to have had in my own operative practice a case of each of these forms of tumour where pain was the chief clinical symptom.[34]

In my own case of fibroid in an undeveloped cornu the patient was 36 years old. She had been married for eight years and had been delivered five years before operation of a child who was then still living. The forceps was used and after recovery she complained of falling of the womb. Mr. W. C Aylward of Tunbridge Wells relieved this symptom by the aid of pessaries and detected a small, painful swelling in the hypogastrium. The patient became pregnant again and aborted at the second month. Then followed much pelvic pain without fever or high pulse. Since the development of the painful swelling the period had been accompanied by sharp pain in the right iliac fossa and it recurred once after the miscarriage. The patient then came under my care. I found the uterus markedly anteverted; the cervix was small but well formed. The sound passed three and a quarter inches. A freely moveable, hard, oval mass occupied the right fornix. It moved separately from the uterus. On making an exploratory incision I was rather surprised to find no evidence of pelvic inflammation beyond a small adhesion which held down the left ovary. The right appendages were not directly attached to the uterus but ran on to the outer surface of a firm tumour of the size of a hen's egg. This tumour was connected internally with the uterus by a broad band, free above and continuous below with the pelvic peritoneum. The cervix had no connexion with the tumour. From the outer border of the anterior aspect of the tumour arose a very broad ribbon-like structure which curved inwards and entered the inguinal canal. This structure was, of course, the round ligament. The uterine artery, remarkably large and tortuous, ran up from below into the outer side of the tumour. I performed a kind of enucleation by dividing the serous coat of the band after ligature of the right ovarian and uterine vessels; the tumour with the detached tube and ovary then came away. There was a broad raw surface left on the divided band; the peritoneum was carefully sewn over it. A year later the patient became pregnant and was delivered of a well-developed male child at term.

It is not clear why this little tumour caused pain, but as it was very heavy for its size it possibly set up the painful symptoms by dragging on surrounding structures. The remarkably thick round ligament has been noted in this anomaly before.[35] The great size of the right uterine artery which supplied this little tumour was remarkable; the left artery which supplied the normal cornu, already once the seat of pregnancy, was distinctly smaller. The right ovarian artery and veins were not dilated. These peculiarities about the blood-supply of a tumour or hæmatometra in an ill-developed cornu must be borne in mind by the operator. He must make sure of the position of the uterine and ovarian arteries before dividing the pedicle. Simple transfixion and ligature of the pedicle as in ovariotomy would be dangerous; the two arteries should be ligatured before division of the pedicle.

Lastly, I observed when speaking of the relations of the round ligament to a fibroid that in some cases of fibroid near the cornu those relations are not very clear.

OÖPHORECTOMY FOR FIBROIDS AND ITS TEACHINGS.

The removal of the ovaries for checking the hæmorrhage from a fibroid and reducing its growth was a very popular operation not many years ago but has recently fallen into disfavour. Mr. J. Furneaux Jordan,[36] however, still defends it, under certain limitations, and Professor Murdoch Cameron created some surprise at the Manchester meeting of the British Medical Association by openly advocating this operation. "A new era," said Professor Cameron,[37] "set in with the methods of Hegar and Tait, and notwithstanding current opinion against their methods, I desire emphatically to say that I have never met with a single bad symptom following the removal of the ovaries and tubes for fibroids when thought advisable, but, on the contrary, I have found it highly beneficial in all cases operated on, and the patients themselves testify to the blessing they have enjoyed through its means. This has also been the experience of others in Glasgow." It would be interesting to know how this distinguished authority manages to remove the ovaries thoroughly without leaving a trace of ovarian tissue and yet without risk of slipping of ligatures owing to the necessary shortness of a pedicle of the ovarian ligament cut completely internal to the ovary. I have taken some pains to demonstrate the anatomy of the ovarian ligament, and noted that, short as it is, it may contain ovarian tissue. As a rule, when oöphorectomy for fibroid was largely practised the pedicle was cut too long and a piece of the ovary was to be seen on the distal side of the ligature. The piece of ovarian tissue sometimes underwent atrophy, as in a case of my own which I recorded over eight years ago.[38] The patient was 41 years of age, and very anæmic from menorrhagia due to a fibroid in the anterior wall of the uterus. I reported that "owing to the shortness of the ovarian ligaments a minute portion of ovarian tissue was left on the distal side of the pedicle. I rather feared at the time that the object of the operation would be frustrated." Yet the menopause was established permanently, without any

[33] Note sur la Greffe de l'Œuf dans une Corne Utérine, Bulletin de la Société Obstétrique de Paris, March, 1902, p. 168.

[34] Ovarian Tumours simulating Inflamed Ovaries, including a Case of Ovarian Myoma, Edinburgh Medical Journal, vol. iii., New Series, p. 443. The reference to the case of fibroid of the cornu is given above.

[35] Josephson: loc. cit.; Falk: Zur Kasuistik von Geschwulstentwickelung und Doppelbildung der Gebärmutter, Centralblatt für Gynäkologie, 1898, p. 1418.

[36] The After-effects of Removal of the Appendages and Removal of the Uterus, British Gynæcological Journal, vol. xv., 1899, p. 369.

[37] The Past and Present Treatment of Fibroids, Brit. Med. Jour., Oct. 11th, 1902, p. 1153.

[38] An address on the Treatment of Bleeding and other Uterine Fibroids by Removal of the Appendages, Brit. Med. Jour., vol. i., 1894, p. 1233, Case 1.

disagreeable symptoms. I had several other similar lucky experiences and the same is the case with other operators. Indeed, I am of opinion, on the ground of this experience, that cure was due in many such cases to some factor of which we are ignorant; the same may be said in explanation of Professor Cameron's brilliant results. A fibroid is capricious in its course and may cease to grow and to bleed spontaneously. I am speaking, be it understood, solely of cases said to be suitable for oöphorectomy, cases where the fibroid grows near the fundus, nourished by the ovarian artery. Yet I have had good results in several cases where even the cervix was involved, though with that condition failure is the rule. My good, or, rather, lucky, results can hardly have been due to the removal of the ovaries alone. Indeed, the majority of patients did well for a year or so, then the bleeding returned or the tumour continued to grow. In one case in my own practice[39] a strange result ensued: great and permanent reduction in the size of the tumour occurred, yet the suppression of the catamenia was but partial. The "show" was accompanied by all the disagreeable symptoms of the menopause, and last autumn (10 years after the operation) the patient, then 48 years of age, saw the period three or four times yearly and suffered from occasional flushings.

A return and advance both of the bleeding and of the growth of the tumour seem, however, to have been the rule when oöphorectomy for fibroid was popular. The reason seems to be evident: the ovarian tissue on the distal side of the pedicle resumed its functions, for a time in abeyance owing to the organisation of lymph thrown across the groove formed by the ligature, a condition well known in the pedicle after ovariotomy.[40] In performing a hysterectomy in a case where oöphorectomy had failed I detected a small, flat button of ovarian tissue lying on the stump of the tube against the cornu of the uterus. The operation itself was not without dangers—slipping of the ligature of the pedicle and thrombosis of a pelvic vessel or of one of the big veins of the lower extremity being not unknown. In anæmic cases the shock was often quite as great as after the removal of a big fibroid and I reported a fatal case in the address to which I recently referred. Again, the ovaries may be so placed in relation to a big tumour as to render their removal impossible. The hæmorrhage in some instances proved to be due to a polypus high up in the distorted uterine cavity and thus easily overlooked.

Mr. Jordan believes that a hysterectomy always involves more shock and takes up more time than an oöphorectomy for fibroid disease.[41] If so uncertain, however, for reasons which I have explained, hysterectomy must be a far better operation. Mr. Jordan's teaching may, I admit, be advantageously followed under exceptional conditions. Thus in 1897 I removed the ovaries of a woman, aged 44 years, who was under Dr. Travers Smith's treatment for hæmatemesis which had greatly reduced her health. There was a small bleeding fibroid and I found the appendages springing from the uterus well below the tumour which was in the fundus. Above all, the ovarian ligaments were long. I speedily removed the ovaries and the "show" at once began to abate, ceasing altogether seven months after the operation. The patient's strength steadily increased, but unfortunately three months after the artificial menopause she died suddenly from perforation of the stomach. As far as the oöphorectomy is concerned this case was satisfactory, but a previous experience to which I have referred taught me that the operation may be followed by fatal shock without any clinical or post-mortem evidence of internal bleeding or sepsis.

[39] Loc. cit., Case 5 and Fig. 4.

[40] For the literature of the subject see "On Ligature of the Pedicle in Ovariotomy," Transactions of the Obstetrical Society of London, vol. xxxv., 1893.

[41] "However skilfully and by whatever method a hysterectomy may be done and however favourable the conditions are it takes longer and inflicts more shock on the patient than removal of the appendages." Loc. cit.

FALMOUTH DRAINAGE.—At the meeting of the Falmouth Corporation held on Jan. 29th the general purposes committee reported that it was of opinion that the council could not carry out the contemplated drainage scheme owing to its cost. It was stated that the committee was unanimous in considering that the action of the Local Government Board in requiring the outfall to be carried considerably farther toward the east made the cost prohibitive.

ELECTRIC SHOCKS.

BY DR. S. JELLINEK.

IN a very remarkable article which appeared in THE LANCET in 1902[1] Mr. F. B. Aspinall gave his views regarding the action of the electrical current on the human body. His reasons are strengthened by observation upon a large number of accident cases and by experiments carried out on the human body. There is a boundary between the technical and the medical knowledge of electricity, and the physician wishing to treat the subject satisfactorily must understand the technical working of electricity as well as the scientific, otherwise the solving of certain questions is impossible. As I myself have been studying atmospheric and technical electricity concerning their effects on animals I wish to add a few remarks to the article published in THE LANCET.[2]

While I agree with Mr. Aspinall on a great many points, on some important questions I am of another opinion. As to his first question: "Is everyone equally susceptible to an electric shock?" I agree with him that susceptibility depends upon the individual. I would add to the above that women and children show less resistance and are therefore more endangered by a current than are males; also that the point of entrance is of importance, mucous surfaces being much more dangerous than the skin.

Secondly, Mr. Aspinall asks: "Is a person suffering from disease more likely to be fatally injured by an electric shock than a person in good health?" and states that the question is difficult to answer. I believe, however, that all diseases which lower skin resistance—e.g., Basedow's disease, diseases of the heart and kidneys, and some skin diseases—predispose to accident from electric shock. The effect of an electric current is, as Mr. Aspinall observed, dependent upon the resistance of the skin. *Cæteris paribus*, the skin offers the chief resistance; for example, we find that on measuring the resistance of the hand when dry the galvanometer (Universalgalvanometer von Siemens) indicates 50,000 ohms, but after wetting the hand with a solution of sodium chloride that the number of ohms is reduced to 500—100 times less than in the first condition. The importance of this becomes clear to us when we remember Ohm's law: $C = \frac{E}{R}$, which shows that in the above case the person in the first condition would receive 100 times less ampères than in the second. A person suffering from heart disease is much more sensitive to the electric current than when the heart is normal. Here I will remark that in my opinion the lesions of the central nervous system produced by electricity are of the greatest importance; of these lesions I will speak later.

Very interesting and highly important are the cases described by Mr. Aspinall with reference to his third question: "Does the physiological condition which a person is in at the time a shock is received make any difference?" With regard to the first case which he mentions I believe that the greater part of the current was carried away by the heavy flannel shirt, which was drenched with perspiration, and that only a small part of the current passed through the body. His description of the effect of the electric current on sleeping persons deserves special consideration, Mr. Aspinall being the first to observe that otherwise dangerous currents are harmless to sleeping persons. In the cases which he mentions it is certain that the persons suffered an electric shock from the fact that severe burns were found

[1] THE LANCET, March 8th, 1902, p. 660.

[2] A part of my observations and experiments have appeared in the following publications: Beobachtungen an Elektricitätsarbeiten, Wiener Klinische Wochenschrift, No. li., 1900; Blitzschlag und Elektrische Hochspannung, Wiener Klinische Wochenschrift, Nos. xxviii. and xxix., 1901; Vorrichtungen zur Verhütung von Unglücksfällen durch die Elektrischen Oberleitungen, eine neue Isolirzange, Oesterreich. Sanitätswes., No. xxxvii., 1901; Elektrizität und Chloroformnarkose, Wiener Klinische Wochenschrift, No. xlv., 1901; Animalische Effecte der Elektrizität, Wiener Klinische Wochenschrift, Nos. xvi. and xvii., 1902; Histologische Veränderungen im Menschlichen und Thierischen Gehirn und Rückenmark theils als Blitz theils als Elektrizität Hoorkstrom-wirkung, Virchow's Archiv, Band clxx., 1902; Zur Klinik der durch Atmospherische und Technische Electrizität verursachten Gesundheitsstörungen, Vortrag am Elektrischen Congress in Bern, 1902; and Elektrisches Unfallwesen, Zeitschrift für Klinische Medizin zu erscheinen).

on the bodies. Unfortunately, I have never had the opportunity of observing the effect of electricity on sleeping persons. I wish to call attention to the similarity which exists between the above-mentioned cases and the following experiments[3] which I have carried out on animals.

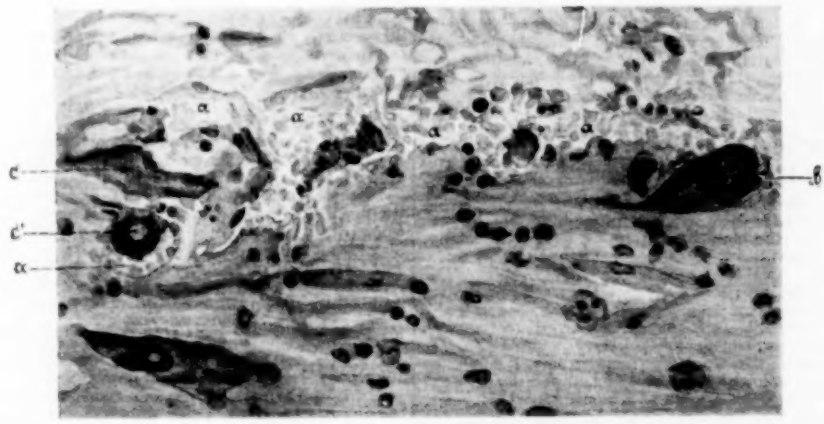
If a rabbit be subjected to a high-tension interrupted current, with one pole in the mouth and the other in the rectum, it will be either immediately killed or paralysed for several hours in all four extremities, or a spasmus nutans may be present, or it may cease to eat and soon die from starvation, &c. If, however, a rabbit be deeply chloroformed so that it does not react to the severest mechanical irritations—for example, the insertion of a needle into the spinal cord—and while in this condition be subjected to the same high tension interrupted current as in the previously described case for only a fraction of a second a remarkable change takes place: the rabbit assumes a position of opisthotonos, then tries to rise, falls down again, cries out, opens its mouth, and in a few minutes the animal appears to have perfectly recovered. The control animal that was narcotised at the same time but not subjected to the current died. *The high-tension interrupted current thereby proves itself to be not only harmless for rabbits during narcosis but is even life-saving.* I have not yet finished my experiments with the other narcotics. I mention the above experiment only because our observations appear to agree; that is, an otherwise fatal current has no injurious effect on animals in an insensible condition (sleep or narcosis).

I agree with Mr. Aspinall in the statement that "the path" which the current takes through the body is important. The left side seems to be more sensitive than the right, but this fact is not due, in my opinion, to any injury to the valves of the heart but rather to the effect on the ganglia of the heart. Owing to the necessity of brevity I cannot further discuss this important question. I will only remark that the current is most dangerous when it is brought to bear on the heart and nervous system in greatest density. I have made pathological sections from the hearts of both men and animals but have never discovered anything abnormal.

Another question on which I differ from Mr. Aspinall is the following: "Does the question of contact made, and whether burning takes place or not, have any effect upon a person's chance of being killed?" I have made similar experiments to measure the resistance and I agree with Mr. Aspinall that the area and completeness of the contact bear an exact relation to the resistance. When, however, Mr. Aspinall asserts that the burning "is a wonderful provision of nature to protect us against fatal shocks, as the burning not only numbs the nerves and thus prevents us from feeling, but will also be found to increase the resistance, thus preventing the current passing," I must protest, as I have found by repeated experiments that the resistance is lowered after burns of the body. In my publication "Animalische Effecte der Elektrizität" I have fully explained three different methods of measuring the resistance, by which I can prove that the longer the tissue is exposed to currents from the main the less the resistance becomes. I have demonstrated the above on a portion of the sciatic nerve by first measuring the resistance which proved to be 120,000 ohms. I then subjected it to a current from the main of 300 volts. I immediately again measured the resistance and found that it had sunk to 70,000 ohms and was reduced by 1000 ohms for every second of time that it was exposed. After the experiments the resistance began to increase. The anatomical alteration of the tissue appears to be the cause of the reduction of the resistance.

This fact of reduction of resistance through currents from the main, which is sometimes very great, is of great importance to the physicians of accident insurance companies. In explanation of the above I would refer to the technical formula for the work performed by a current: A (ampère), $\times$ V (volt) $\times$ t (time). This formula is true only in estimating the power of a current in driving machinery; in men, however, it does not hold true, as resistance constantly decreases through every second of contact, thereby increasing the ampèrage; thus the t has not the function of a simple algebraic expression. In consideration of the above changes which my experiments have proved we must admit that the time (t) during which a person is exposed to the current is important for two reasons: first, that t has the same value as in the above formula; secondly, owing to the decrease of resistance and increase of ampèrage the effect is in five seconds not only five times greater but considerably more.

FIG. 1.



Represents the hæmorrhage and alteration of ganglion cells from the spinal cord of a man killed by an electric current of 1000-volt tension. *a*, Hæmorrhage. *b*, Unaltered cell. *c*, Destroyed cell. *c'*, Nucleus and nucleolus from destroyed cell lying in the hæmorrhage.

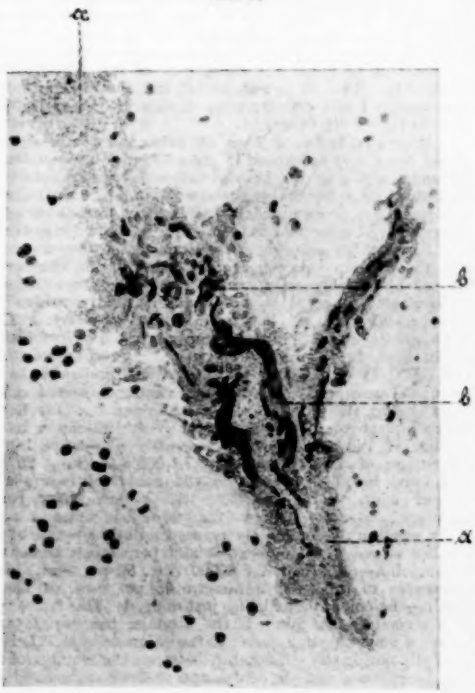
In regard to the sixth question: "Can a person receive a fatal shock without giving the 'cry,' and also can he speak after receiving a fatal shock?" I quite agree with Mr. Aspinall that the cry is "a rapid drawing in of the breath," that it does not occur in every case, and that this cry is due to sudden contraction of the diaphragm. In those cases, however, where the current is not dangerous and the victim is not rendered insensible, but is held to the machine by muscular contraction, the cry is not involuntary.

Mr. Aspinall has discussed very fully the seventh question: "Is an alternating or a direct current shock more likely to prove fatal?" From my experiments and observations I have found that both alternating and direct currents from 500 to 600 volts are dangerous and currents of tension of 1000 volts without exception are fatal. With a low tension of from 100 to 200 volts the alternating current is much more disagreeable, and this difference I can prove by measuring the pressure of the blood current by means of the tonometer of Professor Gärtner of Vienna. Almost without exception

[3] Electrizität und Chloroformnarkose, Wiener Klinische Wochenschrift, No. xlv., 1901.

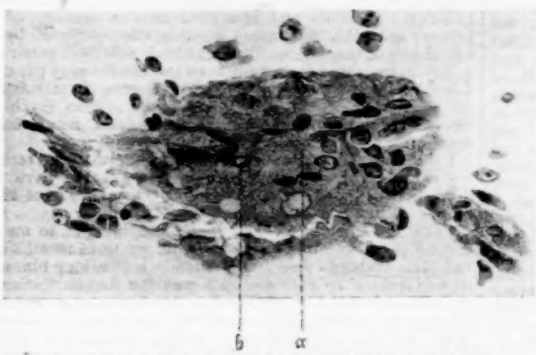
the blood pressure is changed. After exposure to the direct current it increases from 10 to 20 millimetres; while, following the alternating current, a reduction of pressure of from 10 to 15 millimetres is present, thereby proving that the direct current has an action different from the alternating current, when using a current of a tension of from 100 to 200 volts. With higher tensions I have not experimented. Mr. Aspinall is of the opinion that a direct current seems to paralyse the victim at once, "whilst an alternating current shock seems to draw him closer and to tie his body as far as possible into a knot." My experiments and observations on men and animals show that the effect of both currents is to produce a severe spasm of all the muscles during the action of the current. I myself have touched a wire carrying a direct current of 500 volts tension and was immediately repulsed. I have also observed and read of cases where the contact was made with the whole hand gripping the wire, and in these cases the person is always held fast. The most peculiar phenomenon is the pushing away of the persons. Professor S. Exner of Vienna thinks that it is possibly caused by the sudden strong contraction of the entire musculature.

FIG. 2.



Shows hæmorrhage and destruction of the vessel wall from the brain of a girl killed by lightning. *a*, Hæmorrhage. *b*, Tortuous and destroyed vessel wall.

FIG. 3.



Shows hæmorrhage and destruction of the vessel wall from the brain of a guinea-pig killed by an electric current of 300-volt tension. *a*, Hæmorrhage with small particles of brain substance. *b*, Destroyed vessel wall.

Mr. Aspinall's eighth question is: "Cannot medical men give us a more certain method of ascertaining whether a man is dead or not?" As to whether the heart function is entirely lost it is difficult even for the physician to decide. In my experiments on animals I have observed that several hours after apparent death they show signs of life. For this reason I believe that the attempts at restoration after shock should be continued for hours or until some certain sign of death appears.

I wish to call special attention to the importance of the ninth question: "Cannot something more be done to help those who receive a shock?" Mr. Aspinall asks if it would be advantageous to "hold the body for a few seconds head downwards at an angle of 45°, thus flushing the brain and stimulating its action?" "Flushing the brain" in particular I would warn against. The method of reasoning by which Mr. Aspinall arrives at this conclusion is very plausible, but the fact is that there are direct contra-indications to this treatment. During the microscopical examination of pathological preparations taken from three men and six animals that were killed by electricity I was successful in finding that the capillaries of the central nervous system were torn and that blood had escaped and permeated the surrounding nervous substance. These hæmorrhages were found almost without exception in the grey substance of the brain and cord. I also discovered an alteration of the ganglion-cells.[5] These changes are illustrated by Figs. 1, 2, and 3. Such a hæmorrhage is not necessarily fatal, but it is very probable that the above method of flushing the brain would lead to secondary hæmorrhage and therefore result fatally. In my opinion it would be better to perform venesection. Artificial respiration should be continued for hours; massage of the abdomen and of the region of the heart, placing the patient in a hot bath, subcutaneous injections of ether, camphor, or strychnine, should also be carried out. I believe that many of those victims who are pronounced dead could be revived by taking the necessary time and trouble.

In conclusion, I wish to remark that Mr. Aspinall's observations are of the greatest interest to physicians and that these very difficult problems regarding the action of electricity in the human body can only be solved through the combined and harmonious efforts of both physicians and engineers.

Vienna.

[5] The etiology and character of the above described pathological alterations I have fully described in Virchow's Archiv, October, 1902, Band clxx., Heft 1, p. 44.

LENGTH OF STAY OF SCARLET FEVER PATIENTS IN THE METROPOLITAN ASYLUMS BOARD'S HOSPITALS.—At a meeting of the Metropolitan Asylums Board on Jan. 24th the hospitals committee reported that it had had under consideration a letter from the Metropolitan Branch of the Incorporated Society of Medical Officers of Health, drawing attention to the length of stay of scarlet fever patients in the hospitals of the Board as compared with that of patients in some of the provincial hospitals, and suggesting that a conference should be arranged on that subject between the Board's medical superintendents and the medical officers of health. The committee stated that it had discussed that suggestion and as a result of its consideration had informed the society that it saw no objection to such a conference but that it did not appear to it that for the holding of such a conference there was any necessity for the official sanction of the Board or of the hospitals committee, adding that, so far as it could see, there was nothing to prevent two bodies of medical men meeting together to discuss a purely medical question. The Board agreed with the action of the committee.

THE VALUE OF BLOOD EXAMINATIONS AS AN AID TO DIAGNOSIS AND PROGNOSIS.[1]

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I HAVE been greatly interested in blood examinations for some time and am much impressed with the important information which can be derived from this method of investigation. I have therefore ventured to hope that a few remarks on the value of this form of clinical examination as an aid to diagnosis and prognosis will be of interest. During the last few years the number of workers in this field of clinical pathology has increased enormously and some very important papers and text-books have been published which deal with the subject and I would mention in particular the works of Ehrlich and Lazarus, Cabot and Ewing. A further impetus has been given to this fascinating form of research by a greater perfection in the methods, by the introduction of more reliable instruments, and by a simplification of the manner of fixing and staining films for microscopical examination. For many years it has been customary both in hospital and general practice to examine the urine of every patient when first coming under observation. The tendency at the present time is certainly in hospital practice to make also an examination of the blood of every in-patient, and in this respect the Johns Hopkins Hospital at Baltimore has been the pioneer, for every patient admitted to this institution, irrespectively of the diagnosis, has the blood examined in a routine manner. At Guy's Hospital many more examinations are made than hitherto; in the clinical wards which I have recently had under my charge the blood of every patient was examined as soon as possible after admission. It would be a matter of impossibility for a busy medical man engaged in general practice to use this aid to diagnosis in anything like a systematic manner on account of the length of time it requires to conduct a satisfactory examination of this kind. The technique is also a stumbling block; this, however, can easily be overcome by a little practice. The scope of this paper must necessarily be small as the subject is so large, but I shall endeavour by reference to a few of my cases to draw your attention to some important and practical points and to give you an indication of the class of case in which a clinical examination of the blood is likely to prove of value.

There are several different methods of examining the blood, but I shall confine myself to a consideration of the following: (1) the estimation of the number of red and white blood corpuscles and the percentage amount of hæmoglobin; (2) an examination of stained blood films in order to determine the relative proportion of different kinds of leucocytes, the form and character of the red blood corpuscles, and the presence or absence of protozoa and micro-organisms; (3) the determination of the agglutinating power of the blood on certain bacilli—e.g., in typhoid fever and Malta fever; and (4) the bacteriological examination of the blood.

Before considering these methods of examination I will first of all remind you of the condition of the blood in health and of the abnormal corpuscles which may be found in disease. The normal number of red blood corpuscles per cubic millimetre is from 5,000,000 to 6,000,000 in men and about 4,500,000 in women. The average number of white blood corpuscles per cubic millimetre is about 8000 in adults and 10,000 in children. The varieties of white corpuscles and their relative proportions in health are: polymorphonuclear leucocytes, from 70 to 72 per cent.; lymphocytes, from 22 to 25 per cent.; large mononuclear leucocytes, 1 per cent.; eosinophiles, from 2 to 4 per cent.; transitional, from 2 to 3 per cent.; and mast cells, 0·5 per cent. Myelocytes are present in leukæmia but not in normal blood. In health, the red cells are more or less uniform in shape and size, but in disease there may be smaller or larger forms and also nucleated cells of various sizes. The varieties of red corpuscles found are: normal red blood corpuscles, small red blood corpuscles (microcytes), large red blood corpuscles (macrocytes), normal-sized nucleated cells (normoblasts), small-sized nucleated cells (microblasts), large-sized nucleated cells (megaloblasts), enormous sized nucleated cells (giantoblasts), cells which stain irregularly (polychromatophilic), and cells altered in shape (poikilocytes). The estimation of the number of the red and white blood corpuscles is best accomplished by the Thoma Zeiss hæmocytometer and of the hæmoglobin by Haldane's hæmoglobinometer. The technique of the making and staining of films, the estimation of the agglutinating power of the blood on certain bacilli, and the bacteriological examination I will endeavour to explain at the end of my remarks should time permit.

I. *What can be learnt from an estimation of the number of red blood corpuscles and of the amount of hæmoglobin.*—An examination of the blood is often necessary before an accurate diagnosis can be made, when anæmia is the most important and prominent indication of the patient being ill. Anæmia may be due to a deficiency of red blood corpuscles or of hæmoglobin or of both. It is of great importance to note the relation between the reduction in the number of the red blood corpuscles and of the percentage amount of hæmoglobin and it is at once obvious that there are three possible types of change which may occur—viz.: 1. A much greater reduction in the percentage amonnt of hæmoglobin than in the number of red blood corpuscles—viz.: with 3,500,000 (e.g., 70 per cent.) red blood corpuscles to the cubic millimetre 25 per cent. of hæmoglobin—the colour index being therefore considerably nnder 1. This is the chlorotic type of blood. 2. A very great diminution in the number of red blood corpuscles with a relative higher percentage of hæmoglobin—e.g., 1,000,000 (i.e., 20 per cent.) red blood corpuscles to the cubic millimetre with 25 per cent. of hæmoglobin—the colour index being therefore above 1. This is the pernicious anæmia type. 3. An equal or approximately corresponding reduction of the number of red blood corpuscles and percentage amount of hæmoglobin—e.g., with 2,500,000 (i.e., 50 per cent.) blood corpuscles to the cubic millimetre 45 per cent. of hæmoglobin—the colour index being just under 1. This is the type of a secondary anæmia. If the anæmia, however, is very severe it may approach nearer to the chlorotic type. It is by carefully noting the relationship between the number of red blood corpuscles and the percentage amount of hæmoglobin that a secondary anæmia can be distinguished from a primary anæmia when the cause is not apparent after a careful physical examination. A primary anæmia is a form of anæmia in which the cause is either unknown or there is no sufficient pathological change found to account for it. A secondary anæmia may be defined as a form of anæmia which is the result of some recognisable pathological change or lesion. Chlorosis and pernicious anæmia are classed as primary anæmias. Secondary anæmia may be caused by an actual loss of blood, from diminished and defective nutrition, and from increased consumption or loss of albumins; it may therefore result from severe hæmorrhages, from wasting diseases such as phthisis, cancer, &c., from syphilis, malaria, plumbism, intestinal parasites, and many other causes.

I will now tell you about three patients who were sent to me as cases of pernicious anæmia in order to have the diagnosis confirmed or refuted by an examination of their blood.

CASE 1.—A man, aged 40 years, was brought to me for pernicious anæmia. He had been ill for three months and had been unable to work. His friends kept asking him why he was looking so pale and this was the first indication of the commencement of his illness. He had always enjoyed good health before. He had never had anything to do with lead. He had gradually been getting weaker and during the last three months had lost over a stone in weight. He had not vomited or passed any blood. He had had no pain. There had been neither sickness nor diarrhœa. He was intensely anæmic. His pulse was 124 and he was rather dyspnœic. The examination of the blood showed: red blood corpuscles, 3,750,000; white blood corpuscles, 12,000; and hæmoglobin, 25 per cent.—a chlorotic type of blood, the colour index being under 0·5, which at once showed that he was not suffering from pernicious anæmia, and further it was not likely that his condition could be explained by chlorosis for this disease is most unusual—in fact, almost unheard of—in men of this age. I therefore concluded that it was a secondary anæmia and after making a careful, systematic, physical examination found a tumour in the right lumbar region. It was tender,

[1] A paper read before the West Kent Medico-Chirurgical Society.

did not extend far back into the loin, was not connected with the liver, and was resonant on percussion. The urine was healthy. A diagnosis of carcinoma of the ascending colon was made which was subsequently verified by an operation and later by a post-mortem examination. This tumour gave rise to no local symptoms and was not discovered until the blood examination had proved that he was not suffering from pernicious anæmia, for which he had been treated.

CASE 2.—A man, aged 72 years, was brought to me for cough and bladder trouble. He had enjoyed good health until about six months before when he was noticed to be ailing. He had suffered from bleeding hæmorrhoids, frequent micturition, and looseness of the bowels. He had lost flesh and his appearance suggested malignant disease. A careful and systematic physical examination was made but nothing abnormal was found to account for his weakness. His urine was normal. A few weeks afterwards he went to the Riviera, became weaker and very anæmic, and consulted a medical man who felt what he considered to be some enlargement of the spleen. He diagnosed pernicious anæmia and treated him with arsenic. I saw him again about four and a half months after first seeing him, and found that he was intensely anæmic and very much like a case of pernicious anæmia in appearance. A blood examination showed 4,500,000 red blood corpuscles, 5000 white blood corpuscles, and 38 per cent. hæmoglobin—i.e., a chlorotic type of blood, the colour index being low, which at once excluded pernicious anæmia. A careful physical examination of the abdomen and of the tumour which was stated to be the spleen showed that it was more characteristic of an enlargement of the kidney or of a carcinoma of the colon. The former was considered to be most likely and a subsequent post-mortem examination proved it to be so.

These two cases illustrate the marked changes which take place in the blood as a result of carcinoma, but in both, the hæmoglobin index was remarkably low. Case 2 also is an example of what is usually found in most cases of malignant disease—viz., that in the early stages the anæmia is not a prominent symptom. The blood in carcinoma has a closer resemblance to chlorosis than any other form of secondary anæmia, for the hæmoglobin index is always low. In Osler and McCrae's monograph on malignant disease of the stomach, accurate blood counts were made in 59 cases: the average number of red blood corpuscles was 3,712,186 (over 70 per cent.), the average percentage of hæmoglobin was 49·9, and the average number of white blood corpuscles was under 8000 to the cubic millimetre.

CASE 3.—The patient was a man, aged about 40 years, who was sent to me on account of his extreme anæmia and weakness, pernicious anæmia having been diagnosed. He had all the typical symptoms of anæmia and the general appearance of pernicious anæmia. For a long time he had been suffering from bleeding hæmorrhoids. The only abnormal condition, discovered after a careful physical examination, was the presence of large bleeding internal hæmorrhoids. The blood examination showed that he was not suffering from pernicious anæmia, for he had 2,950,000 red blood corpuscles, 12,187 white blood corpuscles, and 22 per cent. of hæmoglobin, which indicated a marked secondary anæmia of the chlorotic type. The hæmorrhoids were treated by operation and the loss of blood stopped. Alginate of iron and arsenic were administered and after a few months he appeared to be perfectly well.

CASE 4. *Chlorosis.*—A girl, aged 18 years, was admitted into Guy's Hospital under my care for syncopal attacks, restlessness, and vomiting. She had led a sedentary life and had been under extremely bad hygienic conditions. There was no history of any loss of blood. She had suffered from amenorrhœa and constipation for some time. She was intensely anæmic and very short of breath on admission. There were loud hæmic bruits at the base of the heart and a well-marked venous hum in the neck. There were no physical signs or symptoms of disease of the lungs, liver, spleen, kidneys, or any of the abdominal viscera or of organic disease of the heart. A diagnosis of chlorosis was made and confirmed by the blood examination. There were 3,000,000 (67 per cent.) red blood corpuscles, 16,000 white blood corpuscles, and 25 per cent. of hæmoglobin. The leucocytosis was caused by some suppuration under the nail of her big toe. She was treated by rest in bed and with ten-grain doses of alginate of iron three times a day. Three and a half weeks afterwards a blood count showed rapid improvement. The red blood corpuscles numbered 3,875,000 and the percentage of hæmoglobin was 50 per cent.

The blood in chlorosis in marked cases is very pale and it rapidly coagulates. The average number of red blood corpuscles is 4,000,000 to the cubic millimetre when the patient first comes under observation and it is extremely rare to find a case with the red blood corpuscles as low as 1,000,000. The leucocytes are not increased. A blood examination alone will therefore not be sufficient to differentiate a case of chlorosis from a severe secondary anæmia. The diagnosis can only be correctly made when the result of the blood examination and the physical examination of the patient are considered together. If leucocytosis is present and the polymorphonuclear cells are increased chlorosis without any complications can be excluded. In the case of chlorosis alluded to above the leucocytosis was accounted for by the suppuration under the big toe-nail.

CASE 5. *Pernicious anæmia.*—A woman, aged 50 years, was under my care for pernicious anæmia, the third occasion on which she had been in the hospital for treatment for this condition. She was first admitted on April 4th, 1901, for vomiting and palpitation. She had been under treatment for acute dyspepsia. She had not been able to do any work since October, 1900, and her chief symptom had been vomiting. On admission she was markedly anæmic and her skin had a peculiar light yellowish tint. A blood examination showed 650,000 (13 per cent.) red blood corpuscles to the cubic millimetre and 26 per cent. of hæmoglobin, the colour index therefore being 2, which is exceptionally high; there were 7000 leucocytes to the cubic millimetre. She was treated with liquor arsenicalis, five minims three times a day. Her mouth was in a very septic condition and there was well-marked pyorrhœa alveolaris. Cultures were taken and various bacilli, cocci, and streptococci were found. On the 13th she was ordered one-minim keratin coated tabloids of creasote and later was treated with injections of anti-streptococcic serum. She improved and on May 14th the blood showed 1,800,000 red blood corpuscles and 41 per cent. of hæmoglobin. She left the hospital much improved but was readmitted two months afterwards. She was intensely anæmic, the blood count being red blood corpuscles 750,000 and hæmoglobin 20 per cent. The blood film showed poikilocytosis and a number of normoblasts. She gradually became worse and died. At the post-mortem examination the only abnormal change which was found was an excess of iron in the liver.

This was a typical case of pernicious anæmia. The blood in this disease is pale and watery and coagulates slowly. There is a remarkable decrease in the number of the red corpuscles. The average in 52 cases examined by Cabot was 1,200,000 per cubic millimetre and the lowest count which has been recorded is in a case reported by Quincke in which only 143,000 red blood corpuscles to the cubic millimetre were present. The examination of a blood film shows in this disease a large proportion of macrocytes and the presence of nucleated red blood corpuscles. The diagnosis must rest on the small number of red blood corpuscles, the relatively higher percentage of hæmoglobin, and the presence of a large number of macrocytes and megaloblasts. The bad prognostic signs in this disease are an extreme reduction of the red cells—e.g., to 600,000 per cubic millimetre,—a high colour index, the presence of a large number of megaloblasts, and an increase in the number of lymphocytes.

II. *Some practical points to be learnt from an estimation of the number and of a differential count of the various forms of leucocytes.*—The average number of white corpuscles in healthy adults is 8000 to the cubic millimetre. Certain physiological and pathological states are associated with an increase of leucocytes, whereas in other diseases the number of these cells may be diminished. Leucocytosis is the term used to indicate the former condition and leucopenia the latter. The degree of leucocytosis varies between very wide limits, from 10,000 or 12,000 to 1,000,000 or more cells per cubic millimetre, and cases have been recorded in which the white have equalled and even exceeded the red in number. Leucocytosis may be caused by a large number of conditions and it may be either physiological or pathological. Physiological leucocytosis occurs in the newly born, after digestion, during pregnancy, after parturition, after cold baths, violent exercise, massage, &c. Pathological leucocytosis may occur after hæmorrhage, as a result of inflammatory and septic conditions, from certain toxic states, in malignant disease, as a result of certain therapeutic

influences, and in leukæmia. I shall confine my remarks to a few of the pathological conditions characterised by leucocytosis. When estimating the particular significance of the presence of leucocytosis in any given case it is not only necessary to find the number of white blood corpuscles per cubic millimetre, but also to know the percentage number of each variety of cell, which can be most satisfactorily ascertained by the examination of a stained film. The following case illustrates the importance of attending to these points.

CASE 6.—A woman, aged 56 years, came to my out-patients' department on account of a painful swelling in her left side below the ribs. About a month before, as she was feeling ill and on account of the pain, she consulted her medical attendant who, after examining her, told her she was suffering from an enlargement of her left kidney. When I examined her abdomen I found a large tumour occupying the left hypochondriac, left lumbar, and left half of the umbilical region. It was tender and had a fairly well-defined, hard, rounded edge extending downwards from the right costal margin towards the umbilicus and reaching to a point about half an inch below it. It yielded a dull percussion note which was continuous in front with the usual area of normal spleen dulness. It could be felt to extend well into the loin, so that from the physical signs it was difficult to say whether the tumour was splenic or renal. I examined a fresh specimen of blood under the microscope and found an enormous increase in the white blood corpuscles, for there appeared to be about one white to seven or eight red and this suggested a diagnosis of spleno-medullary leukæmia. She was admitted into the hospital and a few days afterwards a more careful examination of the blood showed a moderate leucocytosis with the polymorphonuclear cells predominating and no myelocytes. A subsequent post-mortem examination showed that the tumour was a perinephritic abscess, secondary to a calculous pyonephrosis which had discharged into the colon.

This case shows that a too hasty opinion must not be expressed before a satisfactory blood examination has been made. In cases of enlargement of the spleen a correct diagnosis cannot be made until the blood has been examined and this applies in particular to enormous enlargements of the spleen such as may be due to spleno-medullary leukæmia, chronic malaria, splenic anæmia, and spleno-megalic cirrhosis.

CASE 7.—A man, aged 30 years, came to my out-patients' department for anæmia, shortness of breath, and enlargement of the abdomen. He was markedly anæmic. His abdomen was distended and the spleen was enormously enlarged. It was found that the blood was pale and that it clotted very readily. There were 3,000,000 red blood corpuscles, and 300,000 white blood corpuscles to the cubic millimetre, and 42 per cent. of hæmoglobin. The differential count of the leucocytes showed—polymorphonuclear cells, 49 per cent.; myelocytes, 44 per cent.; lymphocytes, 4 per cent.; and eosinophiles, 3 per cent. The large percentage of myelocytes pointed with certainty to a diagnosis of spleno-medullary leukæmia.

CASE 8.—A girl, aged 23 years, was sent to the hospital for enlargement of the abdomen which was thought to be due to an ovarian tumour. A careful physical examination revealed enormous enlargement of the spleen which was considered to be due to spleno-medullary leukæmia. The blood examination showed a diminution in the number of red blood corpuscles and of the amount of hæmoglobin, but no leucocytosis. As she was not suffering from any intercurrent disease and had not been abroad her condition was considered to be due to either splenic anæmia or spleno-megalic cirrhosis, and certainly not to spleno-medullary leukæmia. A few days afterwards she died from hæmatemesis and at the post-mortem examination the enlargement of the spleen was found to have been due to cirrhosis of the liver.

The chief characteristics of the blood in spleno-medullary leukæmia are: a reduction in the number of red blood corpuscles to about 3,000,000 per cubic millimetre, and an enormous increase of the white cells to between 200,000 and 500,000, of which over 30 per cent. are usually myelocytes.

In cases of enlargement of the glands, especially if associated with enlargement of the spleen, a blood examination is necessary before a correct diagnosis can be made. The disease which can, in particular, be diagnosed by this means is lymphatic leukæmia.

CASE 9.—A boy, aged 15 years, had no illness until a week before he was admitted into the hospital when he felt pains in the neck, axillæ, and groins, and on the following day he noticed lumps which quickly enlarged to the size found when he was admitted. On admission enlarged glands were found in the submaxillary, submental, cervical, axillary, suboccipital, and inguinal regions. A diagnosis of acute tuberculosis of the glands or of acute lymphadenoma was made. A blood count showed that the correct diagnosis was lymphatic leukæmia, for there were 3,800,000 red blood corpuscles and 43,750 white corpuscles, of which 95·6 per cent. were lymphocytes. Subsequent examinations showed a great increase in the number of white cells to 116,875 and 126,000. He died from hæmoptysis.

The chief characteristics of lymphatic leukæmia are therefore enlargement of the glands with or without enlargement of the spleen, but, when it is enlarged, never reaching the enormous size it does in spleno-medullary leukæmia. The red blood corpuscles are diminished in number as a rule to about 3,000,000 to the cubic millimetre; the percentage of hæmoglobin is reduced as in spleno-medullary leukæmia. The white blood corpuscles are much increased, but do not as a rule exceed 150,000 to the cubic millimetre and the percentage of the lymphocytes is enormously increased, on an average to about 96 per cent. Such an enormous lymphocytosis as this serves to distinguish it from lymphadenoma and other diseases characterised by enlargement of the glands or spleen.

In suppurative and inflammatory conditions a leucocytosis may occur which does not often exceed 50,000 to the cubic millimetre. A differential count usually shows that the polymorphonuclear cells are in excess and may amount to 90 per cent. of the leucocytes. Klein has described a case of hæmorrhagic septicæmia in which 40 per cent. of eosinophiles were found in the blood. This occurrence of leucocytosis as a result of suppuration has a very important bearing on diagnosis, treatment, and prognosis, and is well exemplified in cases of appendicitis. Last year I had two male patients admitted on the same day suffering from appendicitis and each had a tumour in the right iliac fossa. After a careful physical examination and a consideration of the state of the abdomen and of the general condition of the patients I came to the conclusion that in one the tumour would subside and he would get well without an operation and in the other that a surgical procedure would be necessary. I had a blood examination made and found in the former 8500 leucocytes and in the latter 25,000 leucocytes. I asked my surgical colleague, Mr. L. A. Dunn, to see the two cases, and he decided to operate at once on the patient with the marked leucocytosis and to leave the other. He found an abscess and drained it and the other patient recovered without an operation. I do not mean to claim that a blood examination will tell you when to operate and when not to operate, but it will be an additional indication should the state of the abdomen and the general condition of the patient point to the advisability of immediate surgical interference.

CASE 10.—Three months ago I hurriedly had to make a journey to the west of England to see one of my sisters who was suffering from a typical attack of appendicitis and it was left to me to decide whether she should be immediately operated on or not. Her pulse was 100, the temperature was 103° F., and there was a large tender swelling in the right iliac region. From a physical examination alone it was almost impossible to say whether pus was present or not. I made a blood examination and found between 11,000 and 12,000 leucocytes and on the strength of this I decided to defer the question of operation. The opinion thus formed was justified by her recovery, the tumour gradually diminishing in size until it finally disappeared. I mention this case to emphasise further my opinion of the importance of blood examination in such cases.

Cabot's experience is that a marked leucocytosis—i.e., over 25,000—usually means a large abscess or peritonitis. A catarrhal appendicitis rarely causes leucocytosis. Very mild cases and very severe cases may show no leucocytosis, so that, as I have already stated, a blood examination must not be relied on alone as an indication of the pathological changes which have taken place or as an absolute guide to operation. With regard to differential diagnosis, if there is a difficulty in determining whether a patient is suffering from appendicitis or typhoid fever a leucocytosis would practically exclude typhoid fever. In pneumonia blood examinations are of very great importance both from the point of view of diagnosis and prognosis, for leucocytosis is a constant accompaniment of it, very mild and fatal cases being excepted. The increase in the number of white blood

corpuscles can be found a very short time after the initial rigor and when the case ends by crisis the leucocytes do not fall to their normal number with the temperature but take two or three days to do so. When the temperature falls by lysis the leucocytosis falls with it and the normal number to the cubic millimetre is, as a rule, recorded when the temperature remains normal. If there is a difficulty in making a diagnosis, the presence of leucocytosis would point to pneumonia and exclude typhoid fever, influenza, and malaria. If the case is obviously pneumonia and the patient is very ill with a considerable area of lung involved, an absence of, or a very slight degree of, leucocytosis is an extremely grave prognostic sign. If the leucocytosis remains for several days after the temperature has fallen, and then a further rise of temperature and an increase in the number of leucocytes occur a relapse or empyema is indicated. Dr. H. A. Gaitskell has recently been working in the wards of Guy's Hospital on this subject and has published his results.[2]

CASE 11.—The patient was a woman, aged 24 years, suffering from pneumonia. Dr. Gaitskell found no increase of leucocytes, the whole of the patient's left lung was consolidated, and in spite of the fact that her condition appeared to be satisfactory a bad prognosis was given and was confirmed by the death of the patient on the eighth day.

If pneumonia complicates typhoid fever an absence of leucocytosis or even a leucopenia does not necessarily mean a bad prognosis. A case of this nature was investigated by Dr. Gaitskell.

CASE 12.—The patient was a boy, aged nine years, whose leucocytes did not rise above 10,937 per cubic millimetre. After the first examination, on account of the absence of leucocytosis, a bad prognosis was given, but two days afterwards a typical Durham (so-called Widal) reaction was obtained, and the absence of leucocytosis being thus explained a more favourable prognosis was given and justified by the boy's subsequent recovery.

In typhoid fever the most important characteristic of the blood is an absence of leucocytosis and in the later weeks of the disease the presence of a leucopenia. The differential count shows a progressive increase in the number of the lymphocytes with a corresponding decrease in the polymorphonuclear cells. I have already pointed out that diseases characterised by suppuration are usually associated with a polymorphonuclear leucocytosis, so that an absence of leucocytosis would be a point in favour of typhoid fever and much against appendicitis, perinephric abscess, hepatic abscess, suppurative pylephlebitis, and other forms of intra-abdominal suppuration, and it would also be against pneumonia.

CASE 13.—There has recently been a case of pyosalpinx in the hospital admitted for typhoid fever. The absence of a positive Durham reaction and the presence of a marked leucocytosis helped to exclude typhoid fever and to indicate the presence of intra-abdominal suppuration.

CASE 14.—A few weeks ago a patient under the care of Dr. E. C. Perry (who has kindly allowed me to mention this case) suffering from a typical attack of typhoid fever, suddenly, on the fifteenth day of the disease, complained of severe abdominal pain, became collapsed, and appeared to be suffering from hæmorrhage or perforation. The question of hæmorrhage was soon decided. The specific gravity of the blood was found to be 1053, which indicated that there had been no serious loss of blood. The red corpuscles were enumerated and found to be 3,750,000 per cubic millimetre, which also pointed to the same conclusion. This view was subsequently confirmed by no blood being passed per rectum. It seemed much more likely that perforation had occurred. On the previous day he had bitten off and swallowed the bulb of a thermometer which had injudiciously been placed in his mouth; it was in the third week of the disease; he had suffered from marked twitching of his hands which is said to denote that the ulceration was deep; the abdomen was full, rigid, and tender, and there was very little movement during respiration. The pulse was 128 and running in character. The leucocytes were counted and found to number 8250 per cubic millimetre, a result which was very much against perforation having occurred. It was decided not to operate at once, but that laparotomy should be performed if there was an ingravescent leucocytosis, so a leucocyte count was therefore made every hour for the next 12 hours, the number being found to vary between 7500 and 9000 per cubic millimetre. From a consideration of the result of these blood counts taken together with the improving condition of the pulse it was decided not to operate, and the decision has been justified by his complete recovery.

Malaria is a disease which is often confounded with typhoid fever, for in addition to pyrexia and other symptoms it is also characterised by an absence of leucocytosis. This difficulty does not often arise in this country unless patients have returned to it from a malarial district abroad. The presence of the malarial parasite in the blood is the absolute and decisive test of the presence of malaria. Tuberculosis cannot be distinguished from typhoid fever by a blood examination alone.

Eosinophilia.—I have alluded to a disease in which the lymphocytes are enormously increased, to conditions characterised by an increase in the polymorphonuclear cells, and to another disease in which a large number of myelocytes are present. I shall now say a few words about eosinophile cells. The examination of a blood film and the finding of a large number of eosinophiles were instrumental in clearing up a very difficult case.

CASE 15.—The patient was a man, aged 25 years, who was admitted under my care for cough and attacks of dyspnœa. He had been invalided home from India. He had been seen by a physician who had diagnosed aneurysm and in consequence of this diagnosis he would have had to retire from his appointment. He was sent to me by Dr. C. S. Pantin of Douglas who had diagnosed asthma. I failed to find any positive evidence of aneurysm and an examination under the x rays did not show any sign of this condition. A blood examination showed red blood corpuscles, 6,587,500; white blood corpuscles, 10,625; and hæmoglobin, 90 per cent. The differential count showed 24 per cent. polymorphonuclear cells, 59 per cent. eosinophiles, 4 per cent. large lymphocytes, and 13 per cent. small lymphocytes. Eosinophilia in asthma has been noted by many observers and its occurrence in this case was undoubtedly an important diagnostic sign in favour of this disease. The blood examination saved this patient from compulsory retirement.

Eosinophilia occurs in a good many diseases and especially in certain skin diseases—viz., pemphigus, eczema, sclerodermia, psoriasis, urticaria, &c.; also in some of the diseases due to animal parasites—e.g., bilharzia hæmatobia, ankylostomum duodenale, &c.

Malaria is a disease which cannot be diagnosed with certainty until the parasites have been demonstrated in the red blood corpuscles and this is best accomplished by staining thin films with carbol-thionin blue, eosin and methylene blue, or with Jenner stain. Not only can malaria be diagnosed but the particular kind of parasite may be demonstrated and from the examination of a blood film the type of fever predicted. The demonstration of the parasite is sufficient to distinguish it from other febrile diseases. The spirillum of relapsing fever may be demonstrated by means of blood films. Streptococci, pneumococci, typhoid bacilli, and other organisms are not usually found in stained films and their presence cannot be relied on as an aid to diagnosis.

III. *What can be learnt from the addition of blood serum to living motile cultures of certain bacilli.*—The diagnosis of two diseases—viz., typhoid fever and Malta fever—may be very materially helped by noting the agglutinating power of the serum of a patient suffering from either of these diseases on recent motile cultures of their respective bacilli. If a few cubic centimetres of blood serum from a patient suffering from typhoid fever are added to a recent actively motile broth culture of the bacillus typhosus the bacilli are precipitated in flakes, leaving the upper part of the fluid clear, and if the sediment is examined under the microscope the bacilli will be found to be no longer motile but to be agglutinated into compact non-motile masses. The agglutinating power of the blood is tested by mixing some blood serum with a recent culture of the typhoid bacillus and examining the mixture under the microscope. Authorities differ as to the degree of dilution and the time limit which constitute a positive reaction. It is customary in the Bacteriological Laboratory at Guy's Hospital to use a 50 per cent., 5 per cent., and 0 5 per cent. dilution, and the reaction is not considered positive unless clumping and immobility of the bacilli occur with the 1 in 200 dilution within half an hour. Examinations made before the eleventh day of the disease with a negative result are of little value. That the result of the reaction is of great value

[2] Guy's Hospital Reports, vol. lvii.

is shown by Mr. W. C. C. Pakes's analysis of 304 consecutive cases in which the error was only 3·03 per cent. In doubtful cases a morphological examination of the blood should be made, and if, in addition to a slight or indefinite serum reaction, there are an absence of leucocytosis and a relative lymphocytosis the disease is, without much doubt, typhoid fever. A negative serum reaction does not necessarily prove that the patient is not suffering from typhoid fever. If the clinical evidence is sufficient to make the diagnosis certain a negative serum reaction should in many cases be looked upon as a warning of the possibility—in fact, I might say of the probability—of a relapse.

CASE 16.—Last year I had under my care a boy who was undoubtedly suffering from typhoid fever. Repeated attempts at obtaining a positive serum reaction failed until the beginning of the tenth week of his illness, when a third relapse was commencing.

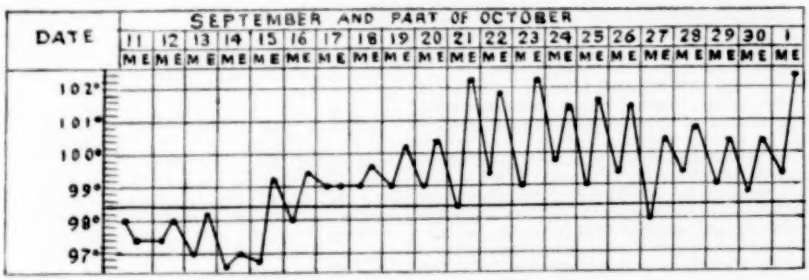
SEPTEMBER AND PART OF OCTOBER
DATE
11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 1
M E M E M E M E M E M E M E M E M E M E M E M E M E M E M E M E M E M E
102°
101°
100°
99°
98°
97°

Chart of temperature in case of ambulatory typhoid fever with relapse. Positive serum reaction on Sept. 14th.

CASE 17.—Lying in the bed opposite to the patient in the preceding case was another boy suffering from the same disease whose serum did not give a positive reaction until the middle of a second relapse.

The following case illustrates the value of the reaction in making a diagnosis of typhoid fever.

CASE 18.—A male, aged 25 years, was admitted on Sept. 11th, 1901, for debility resulting from diarrhœa. He commenced to feel ill a month before admission and complained of headache, diarrhœa, pain in the abdomen, and sickness. The diarrhœa continued and he could not check it with medicine. He became weaker and lost weight, but did not have to keep to his bed. On admission his temperature was 98° F., his pulse was 72, and his respirations were 24. The abdomen was not distended and the spleen was just palpable. There were no spots. The stools were liquid and pale. The possibility of ambulatory typhoid fever was considered and three days after admission his blood serum gave a positive reaction when diluted to 1 in 200, the temperature being 97° (*vide* Chart). A week after admission the temperature began to rise and he had a relapse. The diagnosis of this case as one of typhoid fever was much helped by the positive serum reaction.

Malta fever may be diagnosed by means of a similar serum reaction if a culture of the bacillus Melitensis is mixed with the serum from a patient suffering with this disease.

IV. *The bacteriological examination of the blood.*—Great care must be exercised to prevent the possibility of the blood which is obtained for bacteriological examination being contaminated. The staphylococcus albus, if found, is due to contamination and is not the specific cause of the disease from which the patient is suffering. The micro-organism which is most frequently obtained by cultivating the blood is the streptococcus pyogenes. I have obtained it in a good many cases of infective endocarditis. If a patient is suffering from some valvular lesion, has an irregular temperature, is anæmic, and streptococci are obtained by cultivating the blood a diagnosis of infective endocarditis can be made and the indication for treatment is the injection of anti-streptococcic serum. A question which is often asked is—Is infective endocarditis invariably fatal? The following case bears on this point.

CASE 19.—A boy, aged 15 years, was admitted to hospital suffering from mitral disease. He had had several attacks of rheumatism. His temperature was varied and was running an irregular course, ranging between 98° and 101·5° F. When he first came under my care he had been in the hospital for nearly two months and during the whole of this time his temperature had been raised and he had not had any manifestation of rheumatism or of tonsillitis. A bacteriological examination of the blood showed the presence of streptococci in pure culture. A few days afterwards the temperature dropped to normal and remained normal. A subsequent bacteriological examination of the blood was negative. I considered that this boy was suffering from infective endocarditis, that the acute process had subsided, and the streptococci had died out.

I have endeavoured to show in this paper what can be learnt by examination of the blood in certain diseases. It is only a sketch of the subject which is one of very great interest to me. I hope I have not given the impression that I believe blood examinations are infallible as an aid to diagnosis and prognosis. I fully indorse what Ewing writes, "The examination having been performed *its results are to be interpreted only in the light of the fullest possible clinical information.*"

Mansfield-street, W.

NOTE ON THE RESULTS OF THE TREATMENT OF AN UNUSUAL SERIES OF CASES OF ACUTE INTUSSUSCEPTION.

BY HUGH M. RIGBY, M.S. LOND., F.R.C.S. ENG.,
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DURING the nine days from Dec. 26th, 1902, to Jan. 3rd, 1903, no less than seven cases of acute intussusception were admitted into the surgical wards of the London Hospital. As I was fortunate enough to be the surgeon on duty during this period I had the opportunity of seeing and dealing with them all. It seems worth while to record the notes and results of treatment of these seven cases, six of which were submitted to operation. The result—viz., five recoveries out of the six operated upon—is distinctly encouraging and should be a strong argument in favour of early resort to surgical interference in these too often fatal forms of intestinal obstruction. Statistics of cases of acute intussusception with the results of their operative treatment have been dealt with by many writers. It seems to me that in no class of case can statistics be of less value than in this; the operative mortality must vary enormously from time to time, depending as it does on such slight alterations of the pathological changes found within the abdomen. The very fact of the invaginated portion of the gut being irreducible immediately causes the mortality to rise from, perhaps at the best, 50 to 90, or even 100 per cent. The age of the patient also has a marked influence on the prognosis, while the duration of the illness before its serious nature is recognised is another all-important factor which has to be reckoned with. The notes of my cases show that of the six operated on only one was

irreducible and gangrenous; the others were reducible, some with ease and some with more or less difficulty. One case (Case 1) was evidently quite beyond surgical treatment and died shortly after admission into the hospital. Of the five successful cases four were quite young children, being five months, six months, six months, and eight months old respectively. In no case was inflation or injection of fluid by the rectum attempted; the futility of thus wasting valuable time has been amply demonstrated, whilst the cases relieved completely by these methods are few and problematical. Whilst surgical registrar of the London Hospital I collected for Mr. Frederick Eve the results of 53 cases many of which had been either inflated or injected and in every case laparotomy had to be subsequently performed. Injection or inflation is undesirable for two reasons, first, because it might actually rupture the gut by the pressure exerted, and secondly, because it is likely to reduce the intussusception up to the last inch or two and then to cease to act. This last portion is always the most difficult to reduce manually; again, this last inch or two gives rise to a comparatively small mass which may easily be overlooked on abdominal palpation. The condition is supposed to be completely relieved only to return again when the pressure of fluid or air is relaxed.

In text-books on intestinal obstruction mention is made of the physical condition of the children as a factor in the production of intussusception. Some authors consider that it is more often found in the ill-fed and delicate. My experience at the London Hospital has been exactly the reverse—in nearly every case which I have observed there during the last seven years one has been struck by the good physique and general lustiness of the patient. One might suggest, therefore, that too vigorous peristalsis is responsible for the condition rather than an atonic state of the gut wall; probably in many cases careless feeding with indigestible food has been the exciting factor. That so many cases should occur in the week following Christmas day may also point in the same direction. With regard to the actual operative technique practised in those five cases which recovered, in three cases a median incision was made below the umbilicus, whilst in the other two the abdomen was opened in the lower part of the right semilunar line. In those cases in which the sausage-like tumour could be made out in the descending colon, left iliac region, or per rectum a median incision was made. In each case an attempt was made to reduce the gut by simply introducing two fingers of one hand within the abdomen and manipulating the gut with the other hand on the abdominal wall. Complete reduction by this method was found impossible; in every case the cæcum, colon and ileo-cæcal junction had to be brought up to the wound and manipulated outside the abdominal cavity. The difficulty of complete reduction by the first method was, I found, due to the mobility of the cæcum, a distinct mesocæcum being present in nearly every case. Great care was taken to prevent prolapse of gut through the abdominal wound and the colon which was exposed was protected carefully by hot sponges wrung out of boiled water.

I feel sure that the keynote of success in operating on these cases is "rapidity." The time occupied from the actual incision of the abdominal wall to the tying of the last suture was noted. It did not exceed 15 minutes in each case—one took 10 and another 12 minutes. The usual precautions were taken to prevent shock, the limbs and chest were incased in cotton-wool, and the operations were performed on a hot-water pillow.

With regard to the after-treatment, the feeding of these children was commenced almost as soon as they had recovered from the anæsthetic effects; this in the absence of vomiting is an essential point. In many cases children have been constantly sick for two or perhaps three days before admission to hospital. They are much exhausted, and to withhold nourishment, as is sometimes practised for a further six or eight hours after operation, may just prove sufficient to turn the balance in the wrong direction. Opium was given to each child if any restlessness was present. Two-minim doses of nepenthe acted well; in one case a small hypodermic injection of morphia was necessary owing to persistent vomiting after anæsthesia. In two cases—viz., Cases 2 and 5—a rise of temperature (104° and 106° F. respectively) followed within a few hours of operation; this was doubtless due to sudden toxic absorption from the lymphatic area of the inflamed and damaged gut. Saline fluid injected per rectum in the latter case appeared to have a very beneficial effect. Case 7, in which resection was performed with a fatal result, was a particularly interesting and unusual one. The site of the intussusception commenced only five feet from the duodenum; it was an enteric form—i.e., small gut within small gut—and curiously enough the lower part was invaginated into the upper—i.e., a retrograde or ascending intussusception. This was verified at the post-mortem examination. In addition to the actual intussusception of the gut the mesentery had been twisted on its axis, so giving rise to gangrene of about two and a half feet of intestine. The following are brief notes of the cases.

CASE 1.—The patient was a male, aged five months, who was admitted into the London Hospital on Dec. 26th, 1902, with the following history. The illness began three days previously with severe pain in the abdomen; blood was then noticed in the motions; the child had vomited constantly up to the day of admission. His condition on admission was as follows. He was a well-nourished child, evidently much collapsed; his eyes were sunken and he had the abdominal facies. The pulse was feeble and not countable. The abdomen was generally much distended; no definite tumour was made out on palpation. No tumour was felt per rectum but some blood and slime were present on the examining finger. The child's condition was considered to be too bad for operative treatment and he died four hours after admission. At the post-mortem examination an ileo-cæcal intussusception was found which had entered the ascending and transverse mesocolon. The whole of the small gut was much distended. The intussusception was reducible with difficulty.

CASE 2.—A female, aged five months, was admitted into the London Hospital on Dec. 26th, 1902, with the history that the child was in good health until 5 P.M. on the previous day—viz., the 25th; she then suddenly woke up crying out. The mother gave her a teaspoonful of syrup of rhubarb. Blood was noticed in the next motion and a good deal of blood passed during the night in four or five motions. The child began to vomit in the night; this had continued up to the time of admission. The child had always been breast-fed. On admission she was found to be a healthy and well-nourished child, not markedly collapsed, but the extremities were cold and there was general restlessness. On abdominal examination a well-defined sausage-shaped tumour could be felt lying transversely across the abdomen and extending to the left iliac region. The apex of an intussusception could also be felt easily per rectum. The rest of the abdomen was flaccid and not distended. Operation was performed half an hour after admission. A median incision was made below the umbilicus and two fingers were inserted; an attempt made to reduce thus proving unsuccessful the tumour was brought up to the wound and reduced fairly easily, the last portion to be reduced being the caput cæci. The abdominal wound was sutured with silkworm gut. The time occupied in operation was 15 minutes. With regard to her progress restlessness was marked after operation. Two minims of nepenthe were given with very good results. The bowels acted three hours after operation; the first motion contained blood. The temperature rose to 104° F. on the evening of the operation day; this subsided to normal two days later. The after progress was uneventful. The sutures were removed on the tenth day and strapping was applied.

CASE 3.—A male, aged six months, was admitted into the London Hospital on Dec. 29th, 1902, with a history that two days previously at 6 P.M. he began to scream, and shortly after blood and slime were passed per rectum; the bowels had not acted since. Vomiting had been incessant. The child had always been breast-fed. On admission he was found to be a well-developed child. Some amount of shock was present and whilst being examined vomiting occurred with apparently no effort. On examination general rigidity of the abdominal wall was found. No tumour was made out on palpation and nothing definite could be felt per rectum. The examining finger was, however, coated with bloody mucus. Operation was performed. Under anæsthesia a tumour was easily felt in the right iliac and hypochondriac regions, placed vertically. An oblique incision about two and a half inches in length was made in the right semilunar line. The intussusception was brought up to the wound and reduced. This was effected with some difficulty, the peritoneum of the ensheathing layer being torn for about one inch transversely. This was not sutured. The last two inches of the ileum were invaginated through the ileo-cæcal valve and so formed the apex of the intussusception. This had drawn the ileo-cæcal valve with it, constituting the

form described by Lichtenstern as ileo-colic-iliaca. The abdominal wound was closed with silkworm gut. The time occupied was altogether 10 minutes. Progress was uneventful. No stimulant or opium was required. There was a slight rise of temperature—viz., 100° F. on the day after operation. Feeding was commenced as soon as the effects of the anæsthetic had passed off. The sutures were removed on the tenth day.

CASE 4.—A male, aged six months, was admitted into the London Hospital on Dec. 29th, 1902, with the history that the child was quite well until 7.30 P.M. on the 28th. He then began to scream with pain; some brandy was given, and a good deal of blood was passed in the motions during the night and vomiting was frequent. The child had always been breast-fed. During the last week he had had diarrhœa. On admission he was found to be a well-nourished child. He lay in an apathetic condition and the pulse was small and quick. On examination the abdomen was generally flaccid and a well-marked sausage-shaped mass could be easily felt in the left hypochondriac and iliac regions. Per rectum the apex of an intussusception could be easily felt within one and a half inches from the anus. Operation was performed. A median incision was made below the umbilicus. The intussusception could not be reduced without exposing it through the wound. There was some difficulty in reduction, especially the last two or three inches; the apex was formed by the caput cæci; the cæcum and appendix were much injected, œdematous, and covered with thick lymph; this was gently sponged away. The wound was sutured with silkworm gut. The time occupied was altogether 15 minutes. After operation there was much collapse, the child was restless and his extremities were cold; $\frac{1}{15}$th of a grain of strychnine was given hypodermically and two minims of nepenthe. The bowels acted nine hours after operation, some blood being passed. On the day following operation the general condition had much improved. The sutures were partly removed on the ninth day; no strapping was applied. A few hours later the child was sick and on examining the abdomen the house surgeon, Mr. F. G. Bowen, found that the wound had partly given way and that some small gut had prolapsed; he immediately under anæsthesia replaced the protruded portion and resutured the abdominal wound. The further progress of the case has been uneventful.

CASE 5.—A female, aged eight months, was admitted into the London Hospital on Jan. 2nd, 1903, with the history that she had been vomiting on and off for the last seven days. Two days before admission blood was passed in the motions and a good deal since that time; slime had also been passed. She had always been breast-fed. On admission at 11 A.M. the patient was found to be a small undersized child but well nourished. She was evidently suffering from collapse; the lips were pale and the eyes were sunken. The pulse was thready. On examination the abdomen was generally flaccid and a definite tumour could be felt in the left iliac region; no tumour could be made out per rectum. Operation was performed at 1 P.M. A median incision was made below the umbilicus; the tumour was drawn up to the wound; the intussusception had extended into the rectum. The apex proved to be the ileo-cæcal valve. There were much swelling and œdema of the lower end of the ileum, cæcum, and appendix. During the necessary manipulations the child stopped breathing and artificial respiration was carried on for a few minutes. The abdominal wound was closed with silkworm gut. The time occupied in operation was 15 minutes. The child was much collapsed immediately after the operation; ether was injected and half a pint of saline fluid was also introduced into the subcutaneous tissue. At 7 P.M. on the same day the child had vomited several times after the anæsthetic; she was very restless, the temperature had risen to 106°, and the pulse was uncountable at the wrist. A rectal injection of saline solution (eight ounces) was given and a hypodermic injection of morphia (one-twenty-fourth of a grain). These had a very marked effect; the child slept and next day was much improved. On Jan. 8th the child had an attack of abdominal pain, she vomited several times, and her temperature rose to 101° F. Nothing was found on abdominal examination and further progress was uneventful. The sutures were removed on the tenth day.

CASE 6.—A male, aged five years, was admitted into the London Hospital on Jan. 3rd, 1903, with the history that the illness began on the 1st with abdominal pain. There was no vomiting and nothing was noticed abnormal in the motions. On the 2nd the boy had several attacks of colicky pain but he did not vomit. He had been subject to attacks of colic and diarrhœa from time to time and he had attended the North-Eastern Hospital for Children for tabes mesenterica. There was a family history of consumption. On the day before admission the bowels acted normally. On admission he was found to be a well-nourished boy; he appeared to be comfortable and free from pain. The pulse was full and regular, 80 per minute. On examination the abdomen was not distended, it moved freely on respiration, and there was no tenderness on palpation. An ill-defined tumour could be felt placed transversely above the umbilicus; it felt nodular and somewhat moveable. Nothing abnormal was felt per rectum. A glycerine enema was given with the result that formed motions were passed quite free from blood or slime. As the diagnosis was doubtful no immediate operation was thought necessary. Next day, the 4th, at 12 noon, the child had vomited after milk four times during the night; the bowels had not acted. The temperature was 100° F. The general condition was unchanged except that the abdominal tumour had quite disappeared. At 6 P.M. the child was again examined. No further vomiting had occurred, but there had been several slight attacks of colicky pain lasting only a few seconds at a time. On abdominal examination a well-defined tumour could again be felt; it was situated transversely above the umbilicus, was slightly tender on palpation, and whilst being manipulated was found to enter into peristaltic action. A diagnosis of recurring intussusception was made and operation was immediately decided upon. This was performed at 7 P.M. An incision three inches long was made in the right semilunar line; an intussusception was found formed by the last two inches of the ileum; this had passed through the ileo-cæcal valve and was there fixed. It was easily reduced; the wall of the gut was much thickened and congested. The abdominal wound was sutured with silkworm gut. The time occupied in all was 12 minutes. The after progress of this case was without incident. The sutures were removed on the tenth day.

CASE 7.—A male, aged nine years, was admitted into the London Hospital on Jan. 3rd, 1903, with the history that the illness commenced with an acute attack of abdominal pain on Dec. 31st, 1902—i.e., three days before admission. There were continual retching and vomiting, the bowels were confined, and no blood or slime had been passed per rectum. There had been no previous history of abdominal trouble. On admission he was found to be a well-nourished boy, evidently suffering from severe shock; the extremities were cold, the lips were blue, and the face was blanched. The pulse was 160 per minute, thready and collapsable. On examination the abdominal wall was not rigid, but the whole abdomen was distended. No definite tumour could be made out on palpation, and a rectal examination was negative—no blood was seen on the examining finger. Stimulants were given and hot bottles were applied, and as the general condition improved shortly after admission to hospital an operation was decided upon. The abdomen was opened in the mid-line and a large coil of deeply-injected gut was drawn into the wound; it proved to be small gut forming the insheathing layer of an intussusception, the mesentery of which was twisted on its axis. The intussusception was partially withdrawn; there were no adhesions, the invaginated gut was found to be gangrenous, and an immediate resection was decided upon. This was done as quickly as possible; about three feet in all were excised, including the intussusceptum and part of the intussuscipiens. The cut ends of the gut were united by a Murphy's button. The abdominal wound was closed with silkworm gut. There was profound shock after the operation. Saline fluid was injected and strychnine, caffeine, and brandy were given, but without any appreciable result, and death occurred six hours later. At the post-mortem examination it was found, as above-mentioned, that the intussusception had been a retrograde one. The contracted part of the gut continuous with the intussusceptum was found in a condition of commencing gangrene where the button had been inserted. There was early general peritonitis present.

To summarise briefly, the chief conclusions to be drawn from my short series are: (1) that in these cases immediate laparotomy should be insisted upon without delay; (2) that no valuable time should be lost in attempting inflation of air or injection of fluids per rectum; (3) that the keynote of operative success is rapidity; (4) that in favourable conditions, as in hospitals and with skilled assistants, the mortality of reducible intussusceptions should be diminished

to a very small percentage; and (5) that the chief points in the after treatment are (*a*) early feeding and (*b*) the use of opium when necessary. In conclusion, I have to thank Dr. E. F. Fisher and Mr. F. G. Bowen, house surgeons, for their valuable aid in the care and after treatment of these cases.

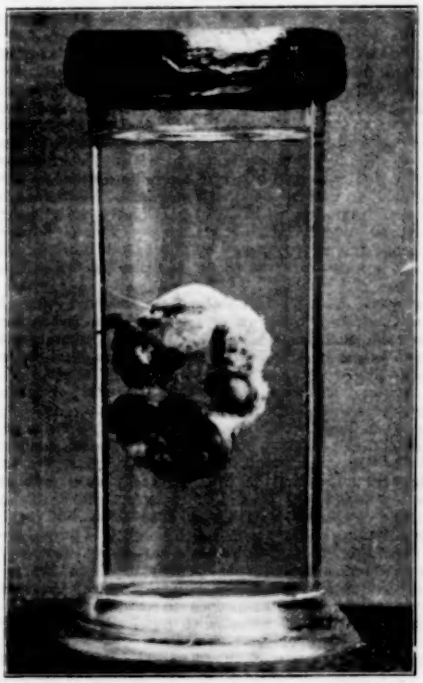
Wimpole-street, W.

A CASE OF EXTRA-UTERINE FŒTATION.

BY THOMAS H. MORSE, F.R.C.S. ENG.

FEW conditions are more alarming than that which may occur to a young wife apparently in the best of health by the rupture of an extra-uterine fœtation. We owe much to the courage and investigations of the late Mr. Lawson Tait on this subject. He it was who first demonstrated to us the way to rescue these cases from imminent death by a timely operation. The following case occurred in Norfolk. I hope in the near future to bring before our profession a series of 20 of these cases which have occurred in my practice, trusting that the details of them may be of service in illustrating important points in diagnosis and treatment for the future. I have entered fully into details as this case is typical of many others that I have operated upon, and I believe the condition to be more common than is generally supposed, early recognition being of the greatest importance.

The patient was a woman, aged 30 years, who was under the care of Dr. A. R. Manby, Mr. H. E. Rowell, and Mr. Hogg, with whom I saw her. She had been married two months and menstruation was missed for the first time three weeks before I saw her. There had been no subjective signs of pregnancy. She was feeling quite well until 3 A.M. on Jan. 5th, 1903, when she was seized with violent abdominal pain followed by faintness and temporary blindness. She was sick once and the abdomen was very tender to touch. The pulse was 130 and the breathing was rapid and thoracic. Pain was referred to the right inguinal region. The symptoms of loss of blood increased until pallor and collapse were extreme and she appeared to be dying. The diagnosis of ruptured tubal pregnancy was made by Mr. Hogg and confirmed by Dr. Manby and Mr. Rowell the same evening. Operation was advised but refused. In response to an urgent summons I saw her on Jan. 6th. Before my arrival saline fluid had been injected into the rectum and the pulse had considerably improved in consequence. The patient at that time looked extremely ill and could not speak above a whisper. Extreme pallor showed itself in the lips, gums, and tongue, and especially in the conjunctivæ. The abdomen was distended and resonant all over the centre, but dull or nearly so in both flanks. The pulse was still feeble—130 per minute—though much improved by the saline injection. The temperature was 96° F. The uterus seemed somewhat fixed and Douglas's pouch contained a resistant semi-solid mass. The abdomen was not tender to touch anywhere—a sign which I have before noticed in these cases and a valuable one as a diagnostic distinction from perforation of the stomach or other hollow viscus. Abdominal section was decided upon. Every precaution having been taken as to asepsis, Mr. Hogg gave ether and Dr. Manby and Mr. Rowell assisted. As soon as the peritoneal cavity was opened a large quantity of dark blood escaped; the pelvis was completely full of clots. As the history given pointed to the right side as the place of origin of the trouble I at once drew up the ovary and tube of that side when a small tubal pregnancy not larger than a hazel-nut was found close to the uterine end of the tube. Here let me remark that I have noticed that the nearer the gestation sac is to the uterine end of the tube the greater in amount has been the hæmorrhage in these cases. The tube was ligatured with silk, and the whole of it, including the pregnancy, was removed; large handfuls of clots were then removed and the abdomen was washed out with sterile hot water. The wound was closed completely with three rows of suture, catgut being used for the peritoneum and muscle and fishing-gut for the skin. A large quantity of water was purposely left inside. The wound was dressed with cyanide gauze and collodion. Shock was not severe and the pulse quickly improved in volume and remained at 120 per minute for the next 12 hours. Judging from the daily reports that I received from Dr. Manby and my nurse I find that the convalescence was rapid and uneventful, the wound having united by primary union.



The illustration shows the Fallopian tube, the upper end being the normal fimbriated extremity and the expansion at the lower end being the gestation sac; it is the smallest I have ever seen which had given rise to so much hæmorrhage.

Norwich.

FURTHER INVESTIGATIONS REGARDING THE INFECTIVE NATURE AND ETIOLOGY OF PERNICIOUS ANÆMIA.

(25 CASES.)

(SYN.: "IDIOPATHIC ANÆMIA OF ADDISON.")
ITS NON-IDENTITY WITH THE "PROGRESSIVE PERNICIOUS ANÆMIA" OF BIERMER.

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(*Continued from p. 288.*)

THE evidence on the points already mentioned I shall now consider.

VII.—GENERAL ETIOLOGY OF 25 CASES.

General etiology.—The facts in connexion with the general etiology in the 25 cases observed in the past three years may be summarised as follows:—*Age* varied from 32 to 72 years. The average age was 51 years, the majority of the cases being between the ages of 40 and 60 years. *Sex*: 19 cases were in men and six were in women. *Station in life*: There were 17 private patients and eight hospital patients. *General health* in all the cases was good. *Poverty*: In no case did this play any part in the production of the disease, nor did *bad food* or *insufficient food*. As one of the hospital patients put it, he had always been careful about what he ate and drank and had been in a position to gratify his wishes in those respects. *Pregnancy* or *puerperal troubles*: In none of the six cases in

women did pregnancy or puerperal troubles play any part. *Loss of blood:* In no case was there any previous loss of blood and in the few cases—the very small minority—in which epistaxis occurred this was only slight in amount and not very frequent in occurrence; it occurred only after the disease was already well developed and was not a factor in its original production. *Malignant disease:* In none of the 25 cases was there reasonable ground for suspecting malignant disease (two cases in which this question arose I have purposely excluded) and in none of the seven cases examined post mortem was any malignant disease found. *Gastric or intestinal disturbance:* A history of antecedent gastric or intestinal disturbance, as I shall presently show, was found in every case. In no case were these of sufficient character or intensity to account for the supervention of such an intense degree of anæmia. The various disturbances connected with this tract have an important significance, which I have brought out, not as causes of the disease but as symptoms of the gastric and intestinal infective lesions presently to be described associated with the disease.

Anatomical lesions.—In all the cases observed during life, 25 in number, and in the cases, seven in number, in which post-mortem examinations were obtained, I found certain infective *lesions* in the *mouth*, *tongue*, *stomach*, or *intestine*—either singly or associated with each other. These were of two classes: (1) a special form of glossitis (in every case); (2) septic lesions—viz., (*a*) a preceding or existing "oral sepsis" (24 cases); (*b*) "septic gastritis," the condition I described (1900) as a common result of long-continued oral sepsis, causing finally gastric atrophy (more or less in every case and most intense in three cases); and (*c*) "septic enteritis"—e.g., a croupous enteritis, patches of congestion and catarrh, follicular enlargement, and patchy colitis (three cases). With regard to these the point to be emphasised now in view of the significance I shall subsequently attach to them is: in no case were these lesions either in anatomical character or severity sufficient of themselves to *originate* the intense anæmia by any interference with nutrition they may have been capable of producing.

Chronic discharges and suppurations.—In no case were there any discharges or suppurations sufficient of themselves to originate the anæmia.

Summary.—In all the 25 cases the anæmia might well have been described in Addison's own words—viz., as "occurring without any recognisable cause whatever; cases where there has been no previous loss of blood, no exhausting diarrhœa, no chlorosis, no purpura, no renal, splenic, miasmatic, glandular, strumous, or malignant disease ..... and without any organic lesion that could properly or reasonably be assigned as an adequate cause of such serious consequences" (1856). On the other hand, in not one of the cases could Biermer's description of the etiology of "progressive pernicious anæmia," which has so largely influenced the views of most subsequent observers, be applied. "A spontaneous origin *without clear etiology* is the rule." In all the foregoing cases an apparently spontaneous origin was, on the contrary, the rule *without exception*.

Conclusion.—The first clear conclusion in regard to the etiology of these 25 cases is this: that even *on clinical grounds* the disease could not reasonably be ascribed to the ordinary causes of anæmia, since (1) it originated without the presence of these, and (2) each and all of these are often present in severest degree without causing the anæmia. In that respect Addison's original etiological foundation has been proved, so to speak, even to the naked eye—i.e., clinically—as far as my own work is concerned, to have been much more solidly laid than that of Biermer. *Some other factor* was required to account for the disease in all these cases.

VIII.—WEAK FOUNDATIONS OF BIERMER'S ETIOLOGY.

Still weaker is Biermer's etiology pathologically. To a degree which they themselves have never recognised or acknowledged, the whole fabric of Biermer's anæmia as built up by its workers has from the very first largely rested on Addison's foundation—that is to say, whenever its so-called causes have one and all been absent, the anæmia has been summarily disposed of by being termed the Addisonian variety—"primary, cryptogenetic"—and no further attempt has been made to throw light on its nature or mode of origin. Moreover, even in the large group of "causes" which they consider responsible for the anæmia—e.g., worms, gastric disturbance, intestinal disturbance, hæmorrhages, &c.—all the chief exponents of "progressive pernicious anæmia" have to admit that these causes are not themselves sufficient but that "something over and above" is required.

1. "A gross *disproportion between cause and effect*," "a kind of *predisposition*," are essential features (Eichhorst, 1891; Lazarus, 1900; Grawitz, 1901; Schaumann, 1900).

2. "*Something over and above* which transforms the worm from a comparatively harmless inhabitant of the intestine to an important disease-producer ..... under certain conditions not yet fully ascertained," such is the admission that has to be made by Lazarus (Ehrlich and Lazarus[1]) with regard to the anæmia caused by the bothriocephalus, which he just immediately before declared to be "progressive pernicious anæmia with a known (*sic*) etiology ..... fully (*sic*) explained in its etiology if not also in its pathogenesis."

3. "We cannot explain these blood diseases without assuming the existence of *an individual predisposition* ..... many points still dark in this difficult subject, notably *the extraordinary persistence and progression of the disease after to all appearance the cause is removed.*" Such is the admission of Professor Grawitz, one of the strongest and most recent (1901) upholders of the theory of the gastro-intestinal origin of the disease from auto-intoxication, its cause being "a vicious circle" of blood changes, gastro-intestinal lesions, altered digestion and absorption, and auto-intoxication, the auto-intoxication causing the blood changes, these causing the atrophy of the glands, this atrophy producing altered digestion and absorption (which in turn increases the anæmia), and this latter causing the auto-intoxication. And yet, curiously enough, the disease persists and progresses after all these "causes" are removed. A similar *predisposition* is admitted by Dr. Schaumann to be necessary for the occurrence of the severe anæmia (which more than any other observer he has studied and thrown light upon) associated with bothriocehapalus anæmia, "since there are a great number of men whose blood is not in the slightest degree affected by the worm, *although the worms of these men contain*, as shown by Dr. Schaumann and Dr. Tallqvist, *the same toxic bodies as other worms* (1900)."

4. "*The causes of the initial anæmia are still imperfectly known*, and cases sometimes occur in *people apparently healthy and living under good conditions.* ..... In some cases after death hæmorrhages have been so few that I have doubted very seriously whether they could ever have been very numerous ..... so very few that this might lead us to adopt Hunter's view that in some cases at least a blood-destroying body may be the cause of the condition." Such is the admission of Professor Stockman, the most recent and chief upholder of the view that the disease is due to the ordinary causes of anæmia aggravated by internal hæmorrhages (1895).

Put together, all these admissions and qualifications form an "underpin" of remarkable size and strength for an erection whose foundation, declared to be a solid one, is "that a spontaneous origin *without clear etiology* is the exception." (See Scheme.)

Conclusion.—General etiology cannot account for this anæmia. It has a special etiology underlying it.

IX.—SPECIAL ETIOLOGY.

There are two classes of lesions which I consider of importance in this relation—(1) a Hæmolysis of special degree and character, well shown by the analyses in the present series of seven cases; and (2) a Glossitis, *observed in every case*, having the peculiar relation to the onset of the anæmia and clinical characters suggestive of its being of an infective nature, described by me in 1900. Histological examination in seven cases shows that it has even more striking pathological features, and in all the three cases bacteriologically examined these are associated with, and presumably dependent upon, a deep-seated pure streptococcal infection of the substance of the tongue.

HÆMOLYTIC NATURE OF THE DISEASE.

Analyses of the liver, spleen, and kidney in seven cases show (1) the large excess of iron; and (2) the peculiar distribution between the liver and the spleen—the reversal of that usually obtaining—to which importance is in my judgment to be attached (1888). The contrast between the results obtained in pernicious anæmia and those obtained in seven

[1] Die Anæmie, Part 2, 1900.

other control analyses made in other conditions of profound anæmia is exceedingly striking.[2] In pernicious anæmia the average percentage of iron in the liver and kidney combined was 360 milligrammes; whereas in health it was 84, in profound sepsis 49, in cancer of the stomach 83, and in ulcerative phthisis 100 milligrammes. 1. It will be noted that I have always included the kidney among the organs analysed. This is a point to which I have attached more and more importance during the past 12 years, for reasons which the present series of analyses bring out. It will be seen that the excess of iron present is not always equally distributed between the liver and kidney, in some cases—e.g., Cases 3 and 6—the percentage in the kidney being very large (to insure absence of any error I had the analyses in these cases repeated). If in Case 6 the analysis of the kidney had not been made, the moderate percentage in the liver would not have accurately represented the amount of blood destruction that had occurred. The varying percentage in the kidney in different cases is notable. It depends, as originally explained in 1888, on the overflow of hæmoglobin from the portal circulation: "If the destruction is slight the products of it present within the portal circulation are completely disposed of by the liver before reaching the general circulation. If it is excessive at any one time the evidences of hæmolysis extend to the general circulation. Hæmoglobin in the form described passes into the general circulation and is excreted through the cells of the convoluted tubules of the kidney. The most likely cases, therefore, in which to find pigment in the kidneys will be those in which the progress of disease has been marked by specially severe exacerbations in which, therefore, the destruction has been very great" (1888). In Case 6 a notable exacerbation of this kind had occurred during the patient's last relapse, the blood corpuscles falling in the course of three or four weeks from 83 to 32 per cent. and the hæmoglobin from 82 to 35 per cent. 2. The analyses bring out also in a striking way the second point which was drawn attention to in 1888 as one of the marked features of the hæmolysis in this disease—the peculiar distribution of pigment between the liver and spleen. In health and in most diseases the spleen usually contains a higher percentage of iron than the liver (as these analyses show, than the liver and kidney combined), sometimes from six to eight times higher. In pernicious anæmia, on the other hand, as will be seen, in every case without exception, this relation was reversed. The percentage in the liver alone exceeded that of the spleen, sometimes as much as five fold (Case 1). 3. I draw particular attention to the analyses (9, 10, 11) in cases of profound sepsis. They prove conclusively that sepsis alone, however severe, cannot cause the pigment changes characteristic of pernicious anæmia. Case 10 is a typical example of what I have termed "septic anæmia," the form of anæmia oftenest mistaken for pernicious anæmia (Addison's anæmia). It was sent to me as such a case, and it resembled this in the general features and appearances, in the degree and character of its blood changes, and in the presence of marked gastro-intestinal symptoms and extreme oral sepsis. But the urine showed no hæmolytic changes and there was no history of the glossitis which I regard as characteristic of pernicious anæmia, and I therefore declared it to be non-pernicious and probably of the type of "septic anæmia." A trace of albumin subsequently appeared in the urine, and the patient died from uræmia two months later. At the necropsy I found a large perinephric abscess in the left loin connected with a calculous pyo-nephrosis of which there were no symptoms during life. The pigment changes strikingly contrast with those of pernicious anæmia. 4. Of special interest, also, are the analyses in gastric cancer (12 and 13)—in view of the very prevalent view that gastric cancer may simulate pernicious anæmia and be a cause of that anæmia. Case 13 was a typical case of this kind, presenting the lemon colour of pernicious anæmia. The low percentage of iron in all the organs is very striking. Case 12 was a case of cancer involving the whole body of the stomach. The high percentage of iron in the spleen in this case, as also in the case of ulcerative phthisis, is noteworthy. It is the condition typically found in long-standing wasting disease depending on inanition. It denotes, for reasons I have elsewhere explained, a lessened, rather than an increased, hæmolysis.

[2] Analyses specially made by Mr. Percy Richards, F.C.S., of Charing Cross Hospital. (For method see THE LANCET of Nov. 24th, 1900, p. 1495.)

If pernicious anæmia could be produced by inanition the result of gastric atrophy, achylia gastrica, &c., as so many maintain, the distribution of blood pigment between the spleen and the liver would be that illustrated in Analyses 12 and 14, rather than that one just drawn attention to in Analyses 1–7. 5. The importance attached since 1868 to pigment changes by all English, American, and Canadian observers is in striking contrast to the neglect of this subject which is the most remarkable feature of German work during the past 25 years. In the latest German monograph on the disease (1900) Ehrlich and Lazarus dismiss the subject in three paragraphs occupying half a page. In my own monograph (1901) 250 pages out of a total of 450 are devoted to the studies connected with this subject. During the same period I know of no new analyses in German literature, whereas in English literature there are at least 54—viz., 19 in pernicious anæmia and 35 in other conditions.

Table of Analyses: Percentage of Iron in Organs in 14 Cases.

No. of case.	Condition.	Liver.	Kidney.	Spleen.
1	Pernicious anæmia.	0·360	0·033	0·069
2	"	0·240	0·042	0·094
3	"	0·363	0·133	0·141
4	"	0·114	0·055	0·111
5	"	0·292	0·013	0·275
6	"	0·140	0·256	0·099
7	"	0·385	0·031	0·090
	Average	0·270	0·090	0·125
	Total	0·360		
8	Health.	0·080	0·004	0·090
	Total	0·084		
9	Intense sepsis. Pyæmia with purpura.	0·089	0·014	0·105
10	"Septic anæmia." Calculous pyo-nephrosis with perinephric abscess.	0·012	0·006	0·095
11	Intense croupous enteritis and oral sepsis.	0·034	0·013	0·050
	Average	0·038	0·011	0·083
	Total	0·049		
12	Cancer of the stomach.	0·123	0·022	1·330
13	"	0·022	0·003	0·013
	Average	0·072	0·012	0·671
	Total	0·084		
14	Ulcerative phthisis.	0·084	0·016	0·605
	Total	0·100		

Result.

—	Average percentage.	
	Liver and kidney.	Spleen.
Pernicious anæmia (seven cases) ...	0·360	0·125
Other conditions (seven cases)	0·079	0·362

X.—INFECTIVE ETIOLOGY OF THE DISEASE.

If I have been able to throw any light on the nature and etiology of the severe conditions of anæmia comprised within Addison's and Biermer's widely different conceptions it is largely due to two circumstances: 1. It was my good fortune to approach the subject (1885), not from the surface where my attention would probably have been engrossed by the conflicting views—historical, clinical, and etiological—connected with the disease, but from the ground (pathological) underlying the whole group of these severe anæmias. 2. While working there I came almost accidentally, as it were, upon a great bed rock of hæmolysis underlying Addison's anæmia (1885) and in endeavouring to expose its size and relations (1886–87) I no less suddenly found the whole superstructure built upon Biermer's different foundation

tumbling about my ears. For instead of a bed rock of hæmolysis, such as I found *in all cases* of Addison's anæmia, I found, underlying Biermer's anæmia, a mass of rubble of various kinds of which hæmolysis was quite the *least* prominent constituent. 3. In consequence of these observations I was able to recognise and to point out very early (1888) the existence of the great "underpin" (C) which the chief builders upon Biermer's foundation are recognising only now (1891, 1895, 1900, 1901).

"With regard to all these so-called causes—gastritis, worms, cancer (*et hoc genus omne*)—it is necessary to assume that there have been superadded *certain other factors* essential to pernicious anæmia *on which its characteristic features depend*. In the case of bothriocephalus latus *some pathological factor other than the presence of worms must be at work* to explain, on the one hand, the frequent presence of worms without anæmia; on the other hand, the occurrence even in Finland of cases of pernicious anæmia—specially intractable cases too—without any worms. For these reasons I am compelled to conclude that, as with malignant disease so with intestinal worms, *their presence alone* cannot be held as sufficiently accounting for the pernicious anæmia *occasionally* associated with them." So I wrote in 1888,[2] as the outcome of the "Investigation into its Pathology" then published, and from that time to the present the object I have steadfastly kept in view has been to seek for an explanation of this anæmia in causes other than those built upon Biermer's foundation. For further experience only served to confirm the conclusions already come to. "In my own mind no fact stands out more clearly in connexion with the etiology of the disease than that none of the above causes (Biermer causes) can of themselves produce Addison's anæmia with its characteristic hæmolytic changes" (1900). On the contrary, my endeavour has been to expose more and more the bed rock of hæmolysis underlying Addison's foundation (1890-1900).

The result has been not only to expose this but to reveal two sets of infective factors, (1) a *specific* (hæmolytic) *infection* whose site and lesions (the tongue, stomach, and intestine), approximate time of contraction, and probable source I have, I think, been able to lay partly bare; and (2) while doing this to lay completely bare a great stratum of *septic infection* traversing the foundations of Addison's anæmia, forming to a large extent the foundation of those forms of severe anæmia which clinically most resemble pernicious anæmia.

XI.—THE FEATURES OF "SEPTIC ANÆMIA" AND "ADDISON'S ANÆMIA" RESPECTIVELY.

It is, I find, this septic infection which gives to the heterogeneous group of anæmias comprised within Biermer's definition "progressive pernicious anæmia" the resemblances which have led them to be mistaken for Addison's anæmia. In them the "septic factor" is so predominant that I have for some time past distinguished them in my own mind by the title of "Septic Anæmia." The features of severe forms of this anæmia are: (1) most of the blood changes found in Addison's anæmia, including the existence of poikilocytes, normoblasts, and megaloblasts, to which so much *distinctive* importance has (erroneously, in my experience) been attached by Ehrlich and most observers; (2) hæmorrhages; (3) dirty yellow, anæmic complexion; (4) very frequently the existence of oral, gastric, and intestinal sepsis and symptoms; (5) fever; (6) severe and often fatal course the disease takes; (7) nervous effects and symptoms in many cases; and (8) favourable prognosis if cause be removed in time.

In Addison's anæmia, on the other hand, the septic factor is, according to my observations, a most important antecedent and concomitant, *but not the only factor*. It precedes the disease, creating conditions of mucosa in mouth stomach, and intestines which permit *the contraction* of the *specific* (hæmolytic) *infection* underlying the real characteristic features of the disease. Its features include those above mentioned in connexion with "septic anæmia," generally more marked and of greater severity than in septic anæmia. They include, however, certain features which mark it off from simple septic anæmia. 1. Most important pathologically, an *intense hæmolysis*, accompanied by pigment changes in the liver, kidney, and spleen—these changes being, according to above observations and analyses made during the last two years, no less characteristically absent in "septic anæmia," even the severest forms. 2. The occurrence of a *glossitis* possessing *peculiar clinical features*, as I before described (1900), and even more *striking pathological characters*, as I have since found, and associated with a deep-seated *infection* of the tongue itself, as I now have ascertained bacteriologically (in three cases). 3. The contraction of this infective glossitis coincides approximately with the onset of the severe anæmia and its accompanying hæmolysis, so that in many cases with a clear history the patient can date the onset of his disease from a particular month when this glossitis was first noted. 4. The source of this hæmolytic and glossitic affection which thus, comparatively speaking, *suddenly* comes on is connected—when the history can be clearly obtained—in all cases with an *exposure to drain poisons* (five cases). 5. The hæmolytic infection once taken root in the mucosa and substance of the tongue, in the mucosa of the stomach, and in some cases in the mucosa of the intestinal tract, is extraordinarily persistent, healing up in one part for a time, then spreading to another—these variations in activity as they can be seen during life in the tongue being attended by an aggravation of all the features of the disease—viz., increased anæmia, increased hæmolytic changes (in the urine), increase of glossitic, gastric, or intestinal symptoms, and increase of toxic (febrile and nervous) disturbances.

XII.—NOMENCLATURE.

To mark off this "remarkable disease," as Addison truly called it, from the mixed group of "symptomatic conditions due to many causes" described and spoken of as "progressive pernicious anæmia," and by many as "pernicious anæmia," has thus in my judgment become an even greater necessity than it was when Addison first described it. "Addison's anæmia" would fitly describe it if Addison's name were not already associated with another disease: and, as I have already had occasion to appreciate, confusion might arise by using the term "Addison's anæmia" only. The term "idiopathic" has been given a generic significance and cannot now be restricted to one form of anæmia, even if it were any more satisfactory than such terms as "primary," "essential," "protopathic," "cryptogenetic," which it is not. I have myself always employed the title "pernicious anæmia" as referring to the rare form of anæmia had in view by Addison, occurring "without discoverable cause"; and it has become quite a task each time one writes to explain that it is to this form, and not to the "progressive pernicious anæmia" of Biermer, "due to many causes," that one refers. But many writers—I fear the majority—use the title "pernicious anæmia" in a generic sense, as including all forms of severe anæmia—"pernicious anæmias" as Grawitz calls them—and the result so far as I am concerned is endless confusion, as I have recently had occasion to note.

Views and conclusions are ascribed to me absolutely opposed to the whole tenour and character of my work from first to last, which notoriously have been to emphasise in every direction from which I have approached the subject the *special nature of this anæmia*. If my work proves anything at all it is that none of the ordinary causes of anæmia—whether they be the older ones, gastritis, gastric atrophy, worms, hæmorrhages, altered digestion, altered absorption, and auto-intoxication—or the new set of conditions which I have recently brought into prominence—bad teeth, pyorrhœa alveolaris, "septic gastritis," or the whole group of septic mouth conditions which I have comprehensively designated "oral sepsis"—can of themselves produce Addison's anæmia with its characteristic hæmolytic changes. I thought to make this quite clear by such statements as that "none of these conditions (e.g., mouth conditions), however severe, can be held to be the direct cause of so rare a disease. Even in the cases in which they are most intense they cannot be regarded as the causes of the disease" and thus felt quite free to discuss the important rôle which (always subordinate to the above conclusion) they one and all might "nevertheless" play. All views and statements such as that I ascribe "pernicious anæmia" to "bad teeth," "pyorrhœa alveolaris," or "foul mouths"—or that I "should like to ascribe pernicious anæmia to such causes"—are not only quite wrong; more than any other conclusion they would stultify my whole work on this disease, which, as stated, has been to point to its very special nature.[3]

[2] THE LANCET, Sept. 22nd, 1888, p. 555.

[3] Op. cit., 204, 1900.

[3] Nothing better illustrates the confusion caused by the terminology of this disease than some of the criticisms which have been made in certain reviews of my recent work. One of the most careful of these is that

In these circumstances some new nomenclature appears desirable. So long as I was not myself clear as to the nature of the large group of severe anæmias which simulated Addison's anæmia and yet, as I was satisfied, were essentially different, it seemed premature to give any new name to the disease. Now that in my own mind (as the result alike of clinical and pathological experience) this great group has been definitely separated off as in a large measure of septic character and may be entitled "septic anæmia," I feel free to suggest another name for Addison's form. It is really a very remarkable *specific infective disease*, characterised by intense *hæmolysis* as its most prominent (although by no means its only) pathological feature, and consequently *anæmia* as its most striking (but by no means its only) clinical manifestation; and this onset of hæmolysis is associated with the onset of a peculiar *glossitis* of *infective* nature. The title which would best describe its character would thus be "specific infective hæmolytic anæmia," or more shortly, "*infective hæmolytic anæmia*" (Addison's anæmia); the *specific* nature of the infection responsible for the hæmolysis being always kept in mind, just as the *specific* nature of the infection is always kept in mind in the title "enteric fever." There are other anæmias complicated by hæmolysis just as there are other fevers complicated by enteric disturbance; but there is no anæmia in which hæmolysis plays such a remarkably preponderating part. There are also other anæmias in which infection plays a part—notably, the large group I have designated "septic anæmia"—but in this group hæmolysis, although in certain cases it may be marked, is *not* the special feature that it is in Addison's anæmia, as the above analyses strikingly show.

Harley-street, W.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

NOTE ON A CASE OF NECROTIC SOFTENING OF THE BRAIN PROBABLY DUE TO INJURY AND ASSOCIATED WITH CARIES OF THE SPINE.

BY H. K. ABBOTT, M.D. DUB.,

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THE patient had served in the Royal Navy and had been a smart active man until he had a fall from a height of 10 or 12 feet. Soon after this he developed epilepsy and was invalided out of the service. I saw him first five years afterwards. He was then thin and poorly nourished and had marked exophthalmos of both eyes, the lids never being quite closed; the right pupil was larger than the left and both reacted sluggishly to light. The knee-jerk was normal. His muscles (especially those of the hands) acted in a jerky spasmodic way and he could not walk owing to lack of power of coördination. He quite misjudged the distance of any object that he tried to touch and he appeared to be quite deaf but could, though with difficulty, read written questions and nod or shake his head in reply. He could also write, though very slowly and with great difficulty; the writing was sprawling and almost illegible, but when it could be deciphered the words were correctly spelt and rational. After some months, however, the process of writing became more difficult and the spelling was generally incorrect. He had severe epileptic fits at intervals of from one to three or four months. Except that he gained flesh to some extent there was little change in his condition for about five years. He was then observed to have a fluctuating swelling in the right lumbar region just above the iliac crest and close to the spine. Some pus was aspirated from this and afterwards there was no further evidence of any disease in that region. He always from the first complained of pain in the head (not localised) and in the legs, but never of any pain elsewhere and he never suffered from diarrhœa. Towards the end of his life he did not take food well and lost flesh, though not to a great extent, and he had epileptic fits more frequently. He died about 15 years after the original injury.

At the necropsy extensive tuberculous peritonitis was found. There was also a large post-peritoneal abscess with thick walls and divided into three compartments which communicated with each other by small openings. This involved most of the left psoas muscle but did not extend downwards beyond the pelvis, and it evidently originated from the bodies of the third and fourth lumbar vertebræ, which were carious to a considerable extent. The laminæ, &c., were sound. There was nothing abnormal in the other abdominal or the thoracic viscera. The occipital bone was thickened for some distance from the junction with the left parietal bone which was also thickened in the adjoining part, the extra thickness being in the inner table which was about double that of the corresponding part on the right side. There was no indication of fracture. The tentorium on the left side was very thick and partly calcified. The pia-arachnoid was slightly thickened and markedly congested, the grey matter generally was wasted, and the left lateral ventricle was much dilated at the expense of the temporo-sphenoidal lobe chiefly. The whole of the occipital lobe on that side and what remained of the lower part of the temporo-sphenoidal presented the appearance of yellow softening. The cerebellum was small and very soft, almost pulpy, and of a yellowish colour and no structure was visible to the naked eye beyond the peduncles. It is, I think, highly probable that the brain lesions at any rate, and possibly the disease of the spine, had their origin in the injury sustained at least 15 years before death.

Fareham, Hants.

A CASE OF SCURVY OCCURRING IN AN INFANT.

BY DAVID YOUNG, M.B. EDIN,

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A CHILD, four months old, was brought to the Hospital for Sick Children, Moor Edge, Newcastle-upon-Tyne, with a history of persistent vomiting and diarrhœa of two weeks' duration, which had been unsuccessfully treated at home. For some time before admission the child had been fed partly on fresh cow's milk and partly on condensed milk. The infant was very collapsed on admission and had to be freely stimulated. After some time the stomach and colon were thoroughly washed out. The diet then ordered was bovinine and barley water, with the addition of a little white of egg. The treatment was so far successful that there was no return of the vomiting; the diarrhœa soon subsided and during the week

which appeared in THE LANCET (Sept. 28th, 1901, p. 851). The writer at the very outset notes as the most remarkable feature of that work—one which he apparently regards as detracting in some way from its value—the contrast between the uncertainty with which I speak of the etiology of the disease and the certainty of my conclusions regarding its pathology. And then, quite misled by "an impression" that I "should have liked to ascribe the disease to bad teeth," he adds, "All this serves to *render* (*sic*) the etiology of the disease very involved." As the remainder of the review clearly shows the *anæmia* he has in view is the same one I have in view—viz., Addison's anæmia—but what *etiology* has he in mind—that of Addison or that of Biermer? The most notable feature of Addison's anæmia notoriously was and has always been the mystery of its cause; and, in reality, the difficulty all have had in getting at its cause might justly be regarded as the greatest possible tribute to Addison's clinical acumen, since it was the absence of "any discoverable cause" which first led him to describe the disease as a "very remarkable" one. Moreover, the caution with which I speak of the class of facts which I have brought into etiological relation with the disease might well be regarded as rather a subject for approval, contrasting as it does with the absolute assurance—in my judgment quite groundless—with which from Biermer's time, 1871, down to the present moment the majority of observers speak of the disease as due to *many causes*. On the one side therefore is Addison asserting that the disease is "without discoverable cause"; on the other, Biermer and many chief workers at the disease asserting that "a clear etiology" is the rule; and it is this chaos that I am charged with "rendering" very involved. As a matter of fact, in his interest in following my very difficult and halting endeavours to expose the foundations of what was termed by Addison "without discoverable cause," the reviewer has inadvertently overlooked the most important fact—namely, that my work involves the most emphatic conclusion regarding etiology reached by any observer since Addison first defined the disease as "without discoverable cause." The conclusion, namely, is that the whole fabric of etiology built up and around Addison's anæmia by later workers has no real foundation; and, so far as I am concerned, has since 1888 been completely demolished and cleared away, leaving Addison's foundation once more standing out clear and well defined; and largely exposing (1) its hæmolytic nature; (2) oral, gastro-intestinal site; and (3) the infective factors underlying it. If the result of this is to render the etiology more involved, what can be said of the alternative view—viz., that the disease can be caused at once by all sorts of causes and without discoverable cause.

following admission there was a gain of two ounces in weight. This treatment was followed for ten days. The temperature then suddenly rose to 102° F. and the child became very restless. Petechiæ were observed on the legs, followed by ecchymoses on both legs and over the sacrum. The gums were then noticed to be swollen and soon became spongy and bled freely. There was also melæna. A scratch which the child received on one of the fingers bled freely. During the following day the child was very restless and there was retraction of the head. The temperature remained high and the pulse rose to 166 per minute. There was no leucocytosis. On the condition being recognised as scurvy the diet was at once changed to fresh cow's milk and lemon juice in glycerine was given freely. From this time the child progressed favourably for about three weeks, when she developed a typical attack of measles, followed by broncho-pneumonia, from which she died.

The diagnosis of scurvy appears to be evident, especially when the feeding and the results of treatment are considered. It is very unlikely that in this case the scurvy could have been associated with rickets, as this condition is extremely rare at the fourth month and careful inquiry into the history and examination of the bones after death failed to give any evidence of rickets. Nor did the condition correspond to the type described by Sir Thomas Barlow as infantile scurvy, for there were no marked tenderness of the limbs and no loss of power; there were no bone changes and no proptosis; and though there were no teeth the gums were spongy. The chief interest lies in the early age at which the scurvy developed, the abrupt onset of the symptoms ten days after the last administration of fresh milk, the sponginess of the gums in the absence of teeth, and the very rapid improvement under anti-scorbutic treatment.

Newcastle-upon-Tyne.

A CASE OF SPURIOUS LABOUR.

BY JOSEPH A. W. PEREIRA, M.R.C.S. ENG., L.R.C.P. LOND.

THE patient, aged 24 years, was married on August 1st, 1899. A couple of months later I was engaged to attend her in her confinement which was expected to take place on May 1st, 1900. Somewhere about January I was told that the patient was losing blood. Concluding that a miscarriage was impending I recommended rest in bed and suggested that if this treatment did not stop the bleeding I was to be informed of the fact. I heard nothing further until March when accidentally meeting the patient's mother I was told that there was again a little bleeding which was arrested by the same treatment. Exactly on the day appointed I was sent for. On arrival I found labour apparently in full progress and the infant's clothes were being aired before a bright fire. The patient herself was in bed, her face buried in the pillows. She was pulling vigorously at a jack-towel tied to the foot of the bed. Her mother and a neighbour were helping on the labour as best they could, one supporting the back and the other buoying her up with cheerful conversation. After being there some minutes I proceeded to satisfy myself that all was right. My astonishment was great when I found the cervix firm and conical. I immediately placed my hand on the abdomen. It was perfectly flat. An invitation to the two by-standers to do the same soon convinced them that we were dealing with a case of spurious pregnancy and labour.

The patient belongs to a very neurotic family. An elder sister was in an asylum and a younger sister suffers from frequent paroxysms of violent temper. The nature of the two losses of blood becomes at once apparent. A noteworthy fact is that the spurious labour came on exactly nine months after marriage.

Exeter.

BARNSTAPLE DISPENSARY.—The seventy-first annual meeting of the supporters of this institution was held on Jan. 29th under the presidency of Sir Bourchier Wrey. The medical report stated that during 1902 the patients numbered 2903. The financial statement showed that notwithstanding an increased expenditure the adverse balance of 1901 had been paid off and a favourable balance of £33 remained.

Medical Societies.

LIVERPOOL MEDICAL INSTITUTION.

Exhibition of Cases.—Infantile Scurvy.

A MEETING of this society was held on Jan. 15th, Mr. RUSHTON PARKER, the President, being in the chair.

Dr. W. B. WARRINGTON described a case of Acute Ascending Paralysis, usually named after Landry. There was a distinct history of an attack of influenza about a fortnight before the onset of symptoms. Motor paralysis rapidly developed in the lower limbs and spread to the arms, the face, the palate, and the thorax. After a stationary period of a fortnight recovery began and became complete. Diaphoretics and morphia were given at first, then ergot, and finally iodide of potassium and mercury. The electrical reactions were normal throughout and the integrity of the sphincters was maintained.—Dr. W. BLAIR BELL thought that the case was one of neuritis following influenza. He narrated a case of Landry's palsy which he had lately seen in a girl, aged 20 years. A negative neurological examination had been made by Dr. W. Aldren Turner.—Dr. W. CARTER said that he had seen two cases of acute ascending paralysis in which the administration of large doses of ergot had done much good, the patients ultimately recovering.—Dr. T. R. GLYNN, Dr. A. S. F. GRÜNBAUM, Dr. NATHAN RAW, and Dr. R. J. M. BUCHANAN spoke, and Dr. WARRINGTON replied.

Dr. WARRINGTON also described a case of Acute Yellow Atrophy in a young woman who had been nursing a child for 16 months. The early symptoms were nausea and vomiting, followed by marked jaundice and diminished liver dulness. Urea was diminished, but leucin and tyrosin were not present in the urine. The knee-jerks disappeared and the patient died from respiratory failure. The duration of the illness was about six weeks.—Dr. T. R. BRADSHAW said that the absence of leucin and tyrosin was no presumption against the diagnosis of acute yellow atrophy; they were absent in a typical case of his own.

Dr. BUCHANAN showed a case of Aneurysmal Varix between the Left Subclavian Artery and the division of the Left Innominate Vein due to a gunshot wound received in the late Boer war. Associated with the varix was left brachial monoplegia with the peculiar condition of flexibilitas cerea of the arm. Dr. Buchanan considered that some indirect damage had been done to the nerves supplying the rhomboids and the lower part of the trapezius, although the bulk of the palsy might be functional. He thought that hypnotic suggestion was likely to be of value.—Dr. BRADSHAW agreed with the diagnosis of aneurysmal varix. He thought that the palsy was entirely functional and the wasting due simply to disuse as there were no deformity and no trophic change in the skin. Flexibilitas cerea in one limb was rare, but the hysterical state on which it depended was not very infrequent in soldiers who had been wounded.—Dr. BUCHANAN replied.

Dr. E. T. DAVIES related a case in which he had removed 1754 Stones from the Gall-bladder of a woman, aged 51 years. There was no definite history of jaundice, but the urine was coloured and the skin was tawny. The patient made an excellent recovery.

The adjourned discussion upon Dr. Peter Davidson's paper on Infantile Scurvy was opened by Mr. S. KELLETT SMITH, who said that they were handicapped from the onset by their ignorance of the true cause of scurvy. There were many theories, but in this country the disease was regarded as the outcome, direct or indirect, of some malnutrition. In the case of adults the anti-scorbutic properties of lime-juice, which contained certain known salts, was amply proved, but it was false argument to conclude from this that the absence of these same salts from the diet was the cause of scurvy. Close examination of the dietary in most cases of scurvy revealed the fact that fats were present in insufficient quantity. Bottle-fed babies were especially liable to suffer in this way, for while attention was given to modification of the proteids and sugar of cow's milk, little regard was paid, as a rule, to the equalisation of the fatty matter. He thought, therefore, that in all cases showing early symptoms of scurvy the diet should be carefully criticised with respect to the proportion

of fat present.—Dr. GLYNN said that he had seen scurvy arise in people who had been put on a strict diet for flatulent dyspepsia. He thought that some brands of Swiss milk were quite suitable for infant feeding up to seven months.—Dr. F. B. O'FLAHERTY had found it difficult to get a good mixture with added cream; butter or cod-liver oil was better. The cream might, however, be given separately.—Dr. RAW, Dr. BUCHANAN, Dr. GRÜNBAUM, Mr. W. B. BENNETT, and Dr. LLEWELLYN A. MORGAN spoke; and Dr. DAVIDSON, in reply, said that although the cases were still rare, yet the disease was on the increase, apparently from the greater use of preserved milks. In his experience there was no preserved milk that could equal fresh cow's milk suitably modified.

The Suture of Divided Nerves.—Ventilation of Bedrooms.—Stone in the Female Bladder.

A MEETING was also held on Jan. 29th, Mr. RUSHTON PARKER, the President, being in the chair.

Dr. NATHAN RAW showed a case in which he had successfully United the Severed Median and Ulnar Nerves several months after division. The point to which he wished to draw special attention was the return of sensation within 24 hours of the operation.—Mr. DAMER HARRISSON had performed many experimental operations with Professor Francis Gotch and had had several successful cases. He had found experimentally that impulses never passed through the nerve before the tenth day. Sensation returned first, then the trophic lesion passed away, motor power followed, and finally electrical reactions were obtained.—Sir WILLIAM M. BANKS recalled cases, which he had shown to the society, in which he had employed the sciatic nerve of the dog and the sheep to repair the injured median and ulnar nerves in man. At the great St. Helen's glassworks division of the latter nerve was of no infrequent occurrence, and in former days, when no attempt at primary suture was made, it was very curious to observe what an amount of sensation and motion gradually returned after two or three years. This was explicable on the "loop-line" theory, but in Dr. Raw's case the immediate return showed that the nerve current had at once found its way back through the old route. Viewing a nerve in the light of an electric telegraph cable, with each thread of the nerve corresponding to each wire of the cable, they knew that when a broken cable was repaired it was necessary to unite the broken ends of the identical wires, whereas when a nerve was joined either immediately or through the intervention of some piece of indifferent tissue it was not possible to join the identical nerve fibres and yet messages were transmitted. Might not the principle of Marconi's wireless telegraphy explain this? Let them suppose the divided ends of the fibres of a nerve to be attuned to each other like Marconi's masts, then any impulses sent along the proximal end from the electrical battery, the brain, could be conceived as travelling through a suitable medium to reach the distal end without the necessity of intervening fibres (wires) at all.—Mr. G. G. HAMILTON had operated on a number of cases by simply suturing the divided ends, and the results had been quite satisfactory. Two cases were mentioned where division of the nerves was overlooked by chemists. In seven cases a few hours after the divided nerve was sutured sensation returned for about 24 hours, and then completely disappeared.—Dr. A. G. GULLAN asked as to the appearance of the distal portions of the nerves. After 14 weeks' separation he would have expected complete degeneration. In this case the immediate return of sensation could not be explained. He also thought that a considerable amount of the improved muscular power and movement was dependent on the long flexors, the nerve-supply of which came off about the seat of section of the nerves, and the tendons of which Dr. Raw united at the operation.—Mr. KEITH W. MONSARRAT had had recently a similar case in which sensation was re-established 22 hours after operation. He thought that this rapid restoration showed that even in the absence of the integrity of axis cylinders the nerve as a whole was capable of conducting sensory impulses, and that the analysis of these impulses took place entirely in the cerebrum.—Dr. W. ALEXANDER and the PRESIDENT also spoke and Dr. RAW replied.

Dr. W. MACFIE CAMPBELL read a note upon Bedroom Ventilation. After dealing with the changes in respired air and the rate of change necessary to maintain purity in rooms of varying capacity he said that a fire in the room was useless unless it was kept up. The Hinckes Bird system and Tobin's tubes were unsatisfactory in his opinion. Dr. Campbell found that the only really satisfactory plan was to have the bedroom window widely open. He found sleep to be more refreshing, and consequently fewer hours in bed were necessary and getting up was a pleasure. He was, moreover, never cold at night, and was freer from catarrh.—Dr. F. H. BARENDT agreed thoroughly with Dr. Campbell's remarks. He hoped that it would become a tenet of personal hygiene that the air of the bedroom should be as pure in the morning as at night.—Dr. W. PERMEWAN, the PRESIDENT, and others spoke and Dr. CAMPBELL replied.

Mr. G. P. NEWBOLT read notes of two cases of Stone occurring in the Female Bladder, one of which was removed by litholapaxy and the other by suprapubic cystotomy. He dealt with the methods of removing stone from that organ and emphasised the fact that vaginal lithotomy might be followed by fistula and should only be practised on certain rare occasions.—Mr. W. THELWALL THOMAS, although particularly partial to suprapubic lithotomy, thought that such an operation in adipose females with ammoniacal urine was liable to lead to septic cellulitis. He preferred vaginal lithotomy, if lithotrity was impossible.—Dr. H. BRIGGS thought vaginal lithotomy had many advantages over the suprapubic route in adult females; abundant evidence now existed in support of this view.—Dr. E. T. DAVIES, Dr. T. BUSHBY, and Dr. W. ALEXANDER spoke, and Mr. NEWBOLT replied.

GLASGOW OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.—A meeting of this society was held on Jan. 28th, Dr. J. Nigel Stark, the President, being in the chair.—Specimens were shown by Dr. E. A. Gibson, Dr. J. M. Munro Kerr, and Dr. G Scott MacGregor.—Dr. Carstairs C. Douglas read a paper on Some Points in Infant Feeding. While recommending maternal nursing as the best, he pointed out that in certain cases where the child did not thrive an analysis of the milk might indicate the error. He had found in some cases a reduction in the percentage of fat and in others a diminution in the sugar or an increase in the amount of proteid. Cow's milk used without dilution was not recommended as a routine but a dilution to one to three without the addition of cream and sugar (preferably lactose) was too much. The speaker pointed out how the reduction in the fats might interfere with the absorption of the lime salts (as lime soaps) and might thus have some bearing on the etiology of rickets. For the infant fed with cow's milk the milk ought to be pasteurised and absolutely free from preservatives. The treatment of certain cases of infantile indigestion was touched upon and a number of the artificial foods received comment.—The paper was discussed by a number of the Fellows.—Mr. R. H. Parry asked about the standard of Glasgow milk.—The President, while thanking Dr. Douglas for his interesting paper, stated that he agreed with Dr. Munro Kerr in his statement regarding the unsatisfactory nature of the artificial feeding of infants. He had not found that undiluted cow's milk always agreed. In some cases he had found marked benefit from the use of a little raw beef juice.—Dr. Douglas, in reply, recommended the pasteurisation of milk as this did not interfere with the antiscorbutic property of milk, which was probably due to the living leucocytes which it contained. In reply to Mr. Parry he said that he had analysed a number of specimens of milk and had found them quite up to the standard.—Dr. Alexander MacLennan read a short note on a case of Large Adenomatous Polypus and showed sections of the tumour and of some other types of polypi.—Dr. Munro Kerr read notes on a case of Carcinoma of the Cervix at Term. Cæsarean section was performed (giving a living child) and was followed by supra-vaginal hysterectomy. This was performed to prevent the very probable onset of sepsis. The patient recovered from the operation, but she died from the effects of the carcinoma six weeks after leaving hospital. During the course of the pregnancy Dr. Munro Kerr had seen the patient and on finding that the carcinoma was inoperable had decided to perform Cæsarean section in order, at least, to save the child.—Mr. Parry instanced a case where he had scraped away the carcinomatous tissue and had delivered the child, which was known to be dead, by craniotomy. The mother had recovered from the confinement.—Dr. A. W. Russell reported a case of Advanced Carcinoma of the Rectum complicating Pregnancy. An inguinal colostomy had to be performed and

to avoid the danger of performing a Cæsarean section after an artificial anus had been established, the uterus with the child in it was removed at the sixth month. Dr. Russell did not think that it would have been justifiable to deliver the fœtus by the vagina on account of the risks of tearing the rectum; the disease had also invaded the vagina.—Mr. Parry, who had performed the hysterectomy on this patient, concurred with these views and did not think any other treatment would have been advisable.

BRITISH LARYNGOLOGICAL, RHINOLOGICAL, AND OTOLOGICAL ASSOCIATION.—A general meeting of this society was held on Jan. 30th, Dr. V. H. Wyatt Wingrave, the President, being in the chair.—At the President's request the secretary read a letter from Mrs. Lennox Browne in reply to the letter of condolence sent her in the name of the association on the occasion of her husband's death.—The President then referred in suitable terms to another loss which the association had sustained in the death of Dr. G. Hunter Mackenzie, and it was agreed to send a letter of condolence to his widow.—The exhibition of cases followed and among them were the following: Mr. W. Stuart-Low: Cases showing the Beneficial Action of Mucin in Atrophic Rhinitis.—Dr. P. H. Abercrombie testified to the great benefit derived from the treatment by several of his hospital patients.—Mr. J. Stewart Mackintosh also spoke in favour of the treatment and referred to its beneficial action on the stomach and bowels and the relief of pain in malignant disease of the rectum.—Dr. L. H. Pegler inquired as to the *modus operandi* of mucin.—Dr. Wylie had seen good results in several cases of atrophic rhinitis treated with mucin.—Dr. W. Jobson Horne suggested that the massage employed with mucin might account for part of the good result obtained, and asked how the internal administration of mucin could affect atrophic rhinitis.—The President congratulated Mr. Stuart-Low on his results with mucin. He thought that not enough time had yet elapsed for the treatment to have had a thorough trial. The good effect on digestion he regarded as of great importance. He suggested that the alkali present in the tabloids of mucin might have something to do with the good results.—Mr. Stuart-Low, in replying, thanked the Fellows for the great interest taken in the subject and described the *modus operandi* of mucin to be local and general. It inhibited bacterial growth and was hygroscopic and cleansing, and it supplied the natural moisture which was defective in these patients. He admitted that the massage carried out by the surgeon was beneficial, but cases had benefited markedly without the massage and only with mucin. Mucin acted as a protective coating to the stomach and it was the natural protector.—Dr. Abercrombie: Two cases of Adhesion between the Soft Palate and the Posterior Pharyngeal Wall, the result of Tertiary Syphilis, operated on with good results.—Dr. E. D. Vinrace thought that the openings would gradually lessen in size as time went on.—Mr. W. J. C. Nourse said that considering the great discomfort arising from the nasal obstruction in such cases he thought it wise to do all in one's power to give relief, and he thought systematic dilatation of the openings might be advisable.—The President congratulated Dr. Abercrombie on the good results following his operation and remarked how much relief might be obtained in such cases with even very small openings.—Dr. Pegler showed cases of Deflected Sputum, treated by Moure's operation, together with the septotome devised and used by Dr. Pegler.—Dr. J. Dundas Grant congratulated Dr. Pegler on the excellent results obtained. He regarded it as a distinct gain to correct the deformity without making a septal perforation.—Dr. Jobson Horne regarded Dr. Pegler's instrument as better than the original one.

SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN.—A meeting of this society was held on Jan. 16th, Dr. G. E. Shuttleworth being in the chair.—Dr. G. A. Sutherland and Mr. J. W. Thomson Walker contributed a paper on a case of Syphilitic Endarteritis and Nephritis in an Infant. The child presented evidence of congenital syphilis and there was paralysis, and later rigidity, of the right arm, the lower extremities also becoming rigid and the head retracted. Albumin was present in the urine. At the necropsy there were endarteritis of the cerebral arteries and softening of the left frontal lobe of the brain. The kidneys showed diffuse interstitial nephritis. A second case of interstitial nephritis due to congenital syphilis was also described. Dr. Sutherland and Mr. Walker considered that the most important change in this form of arteritis took place in the adventitia and that syphilitic arteritis was a secondary and not a tertiary manifestation of the disease. The etiology of nephritis in children was often obscure and the importance of syphilis as a cause was greater than was usually supposed. Many of these cases were probably unrecognised owing to the slight naked-eye changes.—Dr. Leonard G. Guthrie considered that the views expressed by Dr. Sutherland and Mr. Walker bore out his own opinion—namely, that chronic interstitial nephritis in children was often due to syphilis.—Dr. G. Carpenter mentioned two cases of the kind that had been under his care.—The paper was also discussed by Dr. Shuttleworth and Dr. R. Hutchison.—Dr. Sutherland and Mr. Walker replied.—Mr. Walker showed specimens of (1) Traumatic Cephalhydrocele; and (2) Punctured Fracture of the Skull.—Mr. Sydney Stephenson described a case in which Paralysis of the Cervical Sympathetic on one side had closely followed the evacuation of a Retro-pharyngeal Abscess by Hilton's Method. The symptoms were characteristic and included ptosis, contraction of the pupil, enophthalmos, and lowered intra-ocular tension. No changes in the state of the blood-vessels or the function of sweating were noted.—Dr. Guthrie showed an infant, aged five months, suffering from an unusual kind of Microcephaly. The occipital bone showed a beak-like projection and overlapped the two parietal bones. There was in addition spasticity of all the limbs. The child's features did not suggest imbecility.—Mr. A. H. Tubby entered a protest against operating in such cases. His experiences in that direction had been uniformly unfortunate. Craniectomy appeared to be powerless to cure the condition.—Dr. Charles W. Chapman read notes of a case of Dilatation of the Stomach in a girl, eight years of age, who had been accustomed to take unsuitable food at irregular intervals. Under suitable treatment she made a complete recovery.—Dr. Carpenter read notes of a case of Acute Primary Thyroiditis in a rachitic infant, aged 14 months. The disease went on to suppuration, the abscess was opened, and the patient recovered. Dr. Carpenter called attention to the rarity of the condition, even as a complication of the specific fevers, and pointed out that in some reported cases induration of the gland, and not suppuration, had resulted as the sequel of inflammation.

BRIXTON MEDICAL SOCIETY.—At a meeting of this society held on Jan. 29th, Dr. Patrick G. Simpson being in the chair, Dr. R. W. Leftwich read a paper on the Mechanism of the Large Intestine. He pointed out that the structural peculiarities of the colon were all adverse to the view that peristalsis there was the one propelling force. The large lumen, the weak muscular development, the sacculation of the walls, the fixation and the upward course of the ascending colon, all presented obstacles. In cases of orthopnœa a stream had to be forced against gravitation for months together without the help of valves, and yet constipation was not a special feature of the condition. Dr. Leftwich then proceeded to demonstrate that there were two other forces at work. The course of the large intestine suggested a syphon, its short ascending limb, starting from the right iliac fossa, being the ascending colon, and its long descending limb, terminating at the anus, being the descending colon and rectum. There was, therefore, always a fixed fæcal column in the colon, the cæcum being usually empty. After defecation the stream propelled by peristalsis of the small intestine filled the cæcum and, on reaching the fæcal column, pushed this forward and disturbed the balance; syphonage was then set up, the cæcum was emptied, and the rectum was filled. The necessary rigidity of the walls of the colon was obtained by a tonic contraction of the longitudinal bands which also deepened and thickened the dissepiments between the saccules. The existence of this tonus was shown by the deep retraction of the anus—the longitudinal fibres of the rectum being continuous with those of the bands; by the maintenance of the transverse colon *in situ* without waviness, notwithstanding that it was twice as long as its bed; and by the elongation of the colon which took place in sigmoid obstruction. The tension upon the bands and the unequal distribution of gas and solids in this condition accounted for the movements which had been mistaken for peristalsis. The saccular undulations described by Boas must be quite ineffective for propulsion and were connected with absorption only. Further, the cæcum presented

a good example of the hydrostatic paradox. It had a small feed pipe—the ileum—and a piston of much larger sectional area in the fæcal column of the ascending colon, the whole forming a kind of hydraulic lift, the gain being equal to about ten times in the ascending colon and twice in the sigmoid flexure. It was just where this power reached its minimum that syphonage came to the rescue. Dr. Leftwich showed experimentally that syphonage set up a vacuum in the cæcum, the ileo-cæcal opening being blocked probably by a sucking through of the mucous membrane of the ileum like an incipient intussusception, for which lesion a good explanation was thus offered. The formation of a vacuum might have a highly beneficial effect in evacuating the appendix.—A vote of thanks was proposed by Dr. F. F. Caiger and was carried by acclamation.

THERAPEUTICAL SOCIETY.—A meeting of this society was held on Jan. 20th, when Dr. J. Gordon Sharp read a paper on Dita Bark (*Alstonia scholaris*) and Australian Bitter Bark (*Alstonia constricta*), two drugs belonging to the dogbane family. He also showed specimens of the barks and demonstrated the chemical and pharmacological actions of the crude drugs and their alkaloids. Dita bark was found in India, Malay, and Australia. Strong sulphuric acid applied to the surface gave a characteristic pink colour. It contained three alkaloids—ditamine, echitamine, and echitenine, all belonging to one series. The first was the chief; it gave a pink reaction with strong sulphuric acid. In frogs it paralysed muscle by coagulating its substance and was found to act like curare in some respects. This must not be forgotten, for the neglect of this point might explain why in large doses it had often been found to produce collapse. The tree yielding Australian bitter bark was found in Eastern Australia. The bark itself was brown, very bitter in taste, and aromatic in odour. Strong nitric acid applied to the inner surface gave a dark red reaction, similar to the colour produced by the same reagent on the bark of nux vomica. It contained four alkaloids—alstonine (formerly known as chlorogenine), porphyrine, porphyrosine, and alstonidine. Alstonine was the most important of these. Commercial alstonine was mixed with resinous matter and was not crystalline but the pure alkaloid could be made to crystallise. It gave a red reaction with strong nitric acid. A solution of the alkaloid in water, as well as a watery solution of the bark, was fluorescent. In its pharmacology it resembled both nux vomica and quinine but it had not so much resemblance to curare as dita bark or its alkaloids. Like quinine it paralysed *Amœba rotifera*, &c. On beetles (*Blaps mortisaga*), crickets (*Acheta domestica*), and wasps it acted like quinine. In frogs in medium doses it acted like strychnine, but tetanus was not so marked or so universal. For the full play of symptoms both vessels and nerves must be intact. Its final action was to paralyse completely, evidently due to excessive activity. The therapeutics of the drug had been worked out by the Bancrofts of Australia and by Bixby of the United States. It was quite distinct in its action from dita bark and acted on the skin, producing a mild diaphoresis. In the kidneys it increased the volume of the urine and toned up and slowed the pulse. The tincture was especially useful in influenza immediately after the acute symptoms had passed off. The Pharmacopœial dose was too large: one half of the amount specified was enough and when prescribing the tincture that made from *Alstonia constricta* should be ordered.

BURNLEY AND DISTRICT MEDICO-ETHICAL SOCIETY.—A clinical meeting of this society was held on Jan. 8th, Mr. S. M. Giffen being in the chair.—Dr. James Mackenzie read a paper on Pain. He defined pain as "a disagreeable sensation due to stimulation of some portion of the cerebro-spinal nervous system and referred to the peripheral distribution in the external body wall of cerebro-spinal sensory nerves." This definition implied that the sensation of pain, from whatever source the stimulation arose, whether in the brain, in the spinal cord, in the posterior root ganglia of spinal nerves, in the viscera, or in the external body wall, was invariably referred to the peripheral distribution of a sensory cerebro-spinal nerve and that therefore pain was a phenomenon peculiar to the cerebro-spinal nervous system. In the above definition the division of the nervous system into a cerebro-spinal and sympathetic was maintained, as the clinical facts pointed to the conclusion that the sensation of pain (and probably other sensations) did not arise from stimulation of the sympathetic nerves unless through the intermediary of the cerebro-spinal nerves. Reference was made exclusively to the pain and associated symptoms arising from stimulation of the viscera. Experimental observations on animals were practically of no avail in determining this question. Such experiments as had shown the various organs to have been insensitive proved only that the stimulus employed had not been adequate to produce pain. On the other hand, in such experiments as had demonstrated that the stimulus was adequate and where the animal showed symptoms of pain no evidence was available to determine in what region the pain was felt.—Dr. R. C. Holt opened the discussion by speaking of various referred pains which had been accepted as indications of internal disturbance which did not quite accord with Dr. Mackenzie's investigations and theories; he also spoke of Sir Frederick Treves's lecture upon appendicitis and his refutation of the inferences connected with McBurney's point; and finally asked for clinical results with regard to labour pains and with regard to sciatica.—Dr. A. M. Sinclair and Mr. R. C. Rodgers also took part in the discussion.

MIDLAND MEDICAL SOCIETY.—A meeting of this society was held on Jan. 21st, Mr. J. W. Taylor being in the chair.—Dr. J. Douglas Stanley showed the Heart of a Man, aged 47 years. The patient had complained for some time of recurring præcordial pain which also extended down the left arm, of a tendency to faint, and of dyspnœa. The cardiac sounds were feeble and short and the pulse was frequent, irregular, and weak. The patient died suddenly and on post-mortem examination extensive chronic aortitis with degeneration of the valves of the left side was found. The myocardium was abnormally tough and showed fibrotic changes. At the apex the wall of the left ventricle was very thin and showed a slight tendency to bulge, forming early cardiac aneurysm.—Mr. Christopher Martin showed a specimen of Unruptured Tubal Pregnancy removed by operation. There was a history of amenorrhœa for two months, followed by irregular hæmorrhage for three weeks, cramp-like pains in the right side of the pelvis, and the passage of a decidua. On examination a large sausage-shaped swelling could be felt behind and to the right of the uterus. Mr. Martin opened the abdomen and found the right Fallopian tube much enlarged and distended with clot. The fimbriated end was occluded and glued to the ovary. There was no trace of old or recent blood in the peritoneum. The case was evidently one of tubal pregnancy with intra-tubal hæmorrhage. The patient made an excellent recovery from the operation.—A paper by Mr. C. G. Higginson (read in his absence by one of the secretaries) dealt with the treatment of Status Epilepticus. The writer drew attention to the use of chloral in repeated doses and referred to cases that came under his own observation where lives had been saved by this method.—Dr. C. E. Purslow read a paper on Abdominal Hysterectomy.

DERMATOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND.—A meeting of this society was held on Jan. 28th, Dr. J. H. Stowers, the President, being in the chair.—Mr. G. Pernet showed a patient who, in addition to Lupus Vulgaris of the Neck, suffered from Deep-lying Nodules in the Forearm and in other parts. These he regarded as tuberculo-gummata; but several members expressed the view that they were lipomata.—Dr. T. D. Savill showed a case of Morphœa in a Woman and a case of Facial Hemiatrophy (morphœa facialis) associated with trophic disorder of the eyeball on that side and scleroderma of the scalp.—Dr. E. G. Little showed (1) a case of Morphœa of the Leg; (2) a case of Congenital Urticaria Pigmentosa of the Nodular Type; (3) a case of Urticaria Pigmentosa of the Macular Type, also dating from birth; (4) a case of Urticaria Bullosa in an Infant (many members objected to this name and regarded the case as an erythema); (5) a girl suffering from an Eruption on the Legs which he placed in the tuberculide class (there was no evidence of tuberculosis in this case or history of the same); and (6) a boy suffering from Extensive Leucoderma and Melanoderma, the greater part of the scalp being also affected.—Dr. A. Eddowes showed a case of Lichen Planus and the case of extensive Lichen Planus affecting the Scalp and whole of the Body exhibited by him at the last meeting of the society, together with Microscopic Sections of the Skin.—Dr. G. N. Meachen showed (for Dr. Abraham) a case of Urticaria with Pigmentation. The view was expressed that a scraping should be examined for the microsporon furfur.—Mr. T. J. P. Hartigan showed a case of

Tuberculous Folliculitis.—Mr. A. Shillitoe showed an extensive Nodular Syphilide and a case of Lichen Planus Circinatus.—Dr. W. B. Warde showed an old man with Lupus Vulgaris affecting nearly the whole of the Face and Scalp.

EDINBURGH ROYAL MEDICAL SOCIETY.—A meeting of this society was held on Jan. 30th, Dr. Watson being in the chair.—Dr. Wilson showed the following card specimens: (1) Photographs of patients suffering from Paralysis Agitans, Molluscum Fibrosum, and Syringomyelia; (2) Photographs demonstrating Tuberculous Pericarditis; and (3) a Microscopic Specimen of Acute Lymphatic Leukæmia with Streptococcic Poisoning.—Dr. A. M. Malcolmson showed a large Aneurysm of the Aorta.—Dr. R. Dods Brown read notes of a case of Acute Lymphatic Leucocythæmia which occurred in a schoolboy, aged 13 years, who was admitted into hospital suffering from bleeding from the nose, gums, and throat. While in hospital the patient had hæmatemesis, hæmaturia, and melæna, and he died about a fortnight after admission. The post-mortem examination showed marked hæmorrhages throughout the body. Dr. Brown exhibited sections of the various organs, also microscopic sections of the spleen, thymus, and bone marrow. The thymus gland was very much enlarged and the microscope demonstrated that it was crowded with lymphocytes.—Dr. A. B. Ross read notes of two cases of Diabetic Coma both of which were fatal. The coma occurred in middle-aged women and diacetic acid and acetone were present in the urine in both. A post-mortem examination was made in one case and the pancreas was found to be slightly cirrhosed and the stomach showed acute inflammation.—A communication on a case of Spina Bifida by Dr. Hey was read in his absence by Dr. Wilson. The case occurred in a girl six years of age and was successfully operated on.—A dissertation on the Diagnostic Value of the Examination of the Blood by Dr. J. H. Montgomerie Bell was read in his absence by Dr. A. H. Firth.

PATHOLOGICAL SOCIETY OF MANCHESTER.—A meeting of this society was held on Jan. 21st, Mr. Broadbent being in the chair.—Professor S. J. Hickson described some Deformations of Corals produced by Animal Parasites and exhibited specimens and photographs illustrating the various phenomena mentioned.—Mr. Smith showed the specimens from two cases of Intussusception of the Small Intestine, one of which had originated as an intussusception of a Meckel's diverticulum.—Mr. A. J. Rodomanachi exhibited and described a specimen of Paget's Disease of the Nipple.—Dr. Philip Prebble and Dr. W. E. Fothergill described the specimen from a case of Calculous Pyonephrosis.

Reviews and Notices of Books.

A Manual of Medical Treatment or Clinical Therapeutics. By I. BURNEY YEO, M.D., F.R.C.P. Lond., Emeritus Professor of Medicine in King's College, London; Consulting Physician to King's College Hospital; Hon. Fellow of King's College; formerly Professor of the Principles and Practice of Medicine and of Clinical Therapeutics in King's College. New and revised edition. In two volumes. London: Cassell and Co., Limited. Pp.: Vol. I. 696, Vol. II. 818. Price 21*s*.

THE object of this work is the study of disease from the point of view of treatment. The author explains in his preface that the teaching of therapeutics is in his book approached from the side of the disease and not from the side of the drug or remedy. It is by examining into the mode of causation of disease, by investigating the true nature of the morbid changes which underlie the phenomena of disease, and by an exact knowledge of the properties and mode of action of the agencies that are administered for the purpose of favourably influencing its course that what are termed rational indications for treatment are arrived at. Dr. Yeo, therefore, has attempted, wherever it was possible, to deduce rational indications for treatment from an examination of the pathological nature and the clinical course and characters of the disease under discussion. For the purposes of practitioners and students this is certainly the most advantageous plan to adopt and that Dr. Yeo has succeeded in his endeavours we think will be allowed by every reader of this manual. The etiology and symptoms of disease are considered in terse, concise terms which convey a large amount of information, but for a full clinical description text-books on general medicine must, of course, be consulted. Selections of formulæ are added to most of the chapters for the purpose of giving completeness and breadth of view to the subject.

Part I. is devoted to a consideration of the treatment of Diseases of the Organs of Digestion. When first entering on private practice the young medical man will be surprised to find how large a number of patients will present themselves suffering from some form of indigestion. The treatment of such cases will consist partly of dietetic measures and partly of the administration of drugs; but the course to be adopted in any particular case will be by no means easy to decide. Dr. Yeo's remarks on acute and chronic gastric catarrh, dilatation of the stomach, and dyspepsia will be found of the greatest value in dealing with these conditions. The directions given as to diet are very lucid, and the many hints as to treatment by drugs, together with the large number of formulæ, make the chapters devoted to diseases of the digestive organs most valuable for reference. The section on Modern Gastric Methods will also be read with interest. Dr. Yeo very wisely deals only with the chief clinical types of gastric disorders and avoids the consideration of the various subdivisions and forms of dyspepsia as set forth in some recent treatises on gastric diseases—such as "achylia gastrica," "neurasthenia gastrica," "gastrosuccorrhœa," &c. Certain methods of investigation and treatment of gastric disorders, however, which are fully described in the works just referred to, are considered, such as the examination of the contents of the stomach after the administration of test meals. We agree with Dr. Yeo that too much reliance must not be placed on the inferences that are drawn by some physicians from the results of such analyses. A detailed examination of the chemistry of the gastric secretion must be left to the chemist skilled in pathological analyses and can hardly be satisfactorily conducted by the practitioner.

Diseases of the Heart and Blood-vessels and of the Blood and Ductless Glands are dealt with in Part II. We strongly recommend a study of these pages to young practitioners. The remarks on cardiac tonics are excellent. Due stress is laid on the importance of diminishing the mechanical work of the heart, for this point in the treatment of cardiac affections is apt to be forgotten and the heart may be unduly stimulated by digitalis. Much better results are often obtained by the administration of vaso-dilators, especially when there is degeneration of the cardiac muscle. The chapter on the Management of Special Symptoms dependent on Chronic Valvular Disease also contains many valuable hints as to obtaining relief from the distressing symptoms which may accompany a failing heart.

Parts III. and IV. of the first volume are devoted to a consideration of the Treatment of Diseases of the Organs of Respiration, including pulmonary tuberculosis. The same high standard is maintained as in the earlier chapters of the book.

In the second volume the chapters devoted to Diseases of the Liver contain sound advice. For instance, some cases of "catarrhal jaundice" prove difficult to manage; Dr. Yeo suggests several measures which may be adopted in such circumstances. The Treatment of Diseases of the Nervous System is very carefully discussed, but we have not space to deal fully with the many chapters occupied by a consideration of this subject. The remarks on the Treatment of

Insomnia will repay perusal, as will also the chapter on Epilepsy. Dr. Yeo extols the administration of bromides in this affection, and with regard to the appropriate dose he rightly maintains that we must study each case that comes under observation and note the individual susceptibility to the drug and regulate the dose accordingly; some individuals will be found to require much larger doses than others. The remaining part of this volume contains instructions on the Treatment of Constitutional Diseases (gout, diabetes, rheumatoid arthritis) and of the Specific Infective Diseases.

We can speak in the highest terms of praise of this publication and strongly recommend a study of it to all practitioners and senior students.

Diet and Food, considered in Relation to Strength and Power of Endurance, Training, and Athletics. By ALEXANDER HAIG, M.A., M.D. Oxon., F.R.C.P. Lond. Fourth edition, with seven Illustrations. London: J. and A. Churchill. 1902. Pp. 127. Price 2*s.*

Avenues to Health. By EUSTACE H. MILES, M.A. London: Swan Sonnenschein and Co. 1902. Pp. 438. Price 4*s.* 6*d.*

The Art of Breathing as the Basis of Tone Production. By LEO KOFLER, Teacher of the Art of Singing, New York City. London: J. Curwen and Sons. 1902. Pp. 277. Price 4*s.*

THESE three little books may well be criticised side by side, for the first two deal mainly with the question of health by way of the alimentary canal and the third with health by way of the respiratory apparatus. Dr. Haig's views are too familiar to require here any fresh exposition. That in a great number of cases a large proportion of his statements hold true we have no doubt. We have equally little doubt that he allows too little for other injurious influences upon the metabolism of the body than the ingestion of improper nitrogenous food stuffs. There is, at any rate, this great advantage about Dr. Haig's writing. It clearly states a clear issue. His view reduces all men and women to mere automata illustrating this simple principle—nine ounces of albumin per pound of body weight if they are to keep in perfect health. If we do not agree with the precise working of Dr. Haig's human machine nothing can be easier than to say so and to give reasons why.

With Mr. Miles the case is very different, though the aim of his book is much the same. Mr. Miles's description of health, however, is so far-reaching, and he includes so many only slightly cognate spiritual conditions, that we are not to expect the precise conclusions of Dr. Haig. Mr. Miles would appear to consider a person unhealthy, for instance, who does not enjoy good music or a dance. Yet men of unexceptionable bodily condition may not find any pleasure in the one or trouble to acquire the practice of the other. No doubt Mr. Miles's sketch of a healthy man presents us with a being uniformly endowed with a level excellence of mental and physical qualities. But we cannot admit that everyone less happily gifted is therefore to be called unhealthy. Some of Mr. Miles's principles land him in quaint conclusions and as he possesses the enthusiast's fixity of gaze the humorous side of his own picture does not catch his eye. Thus on this same question of dancing we cannot read without an amused image of what would occur in the ordinary ballroom were Mr. Miles's doctrines enforced that "after the dance there should be cold sponging and rubbing." Broadly speaking, certainly most of Mr. Miles's recommendations are admirable, particularly when he advocates fewer and simpler meals and regular devotion to simple but various bodily exercises.

Mr. Kofler's book has the merit of being the outcome of long actual experience. Here and there it shows the disadvantages arising from defective training in physiology, but on the whole it is a valuable little work and should be studied by actors, singers, and public speakers with great benefit to themselves.

LIBRARY TABLE.

Annals of Ophthalmology. Vol. XI., No. 4. 1902. H. V. WÜRDEMANN, M.D., Managing Editor. Pp. 209. Published quarterly by Jones H. Parker, St. Louis, Missouri, U.S.A. Price $4 per annum in advance.—This part of the *Annals of Ophthalmology* contains several interesting articles, amongst which may be mentioned the following:—1. A Study of the Connective Tissue of the Orbit by a New Method, by Lucien Howe, M.D., of Buffalo, New York. The author of this article recommends the hardening of the orbit and of its contents in Zenker's fluid for several days, then decalcification by means of cotton wool moistened with 20 per cent. hydrochloric acid wrapped round the bony walls, and finally staining with Gerson's picro-fuchsin stain or with Mallory's phosphomolybdic-acid aniline blue. The mode of insertion of the recti muscles is illustrated by reproductions of photographs which, however, leave much to be desired in point of clearness. 2. J. P. Nuel, M.D., of Liége, on Toxic Amblyopia. This article is translated by F. W. Marlow, Professor of Ophthalmology in the University of Syracuse, New York. Professor Nuel holds that both the optic nerve and the retina are implicated in the morbid process associated with alcohol-nicotin amblyopia and maintains that the inflammation is of a parenchymatous nature. 3. Alexander W. Stirling, M.D., C.M. Edin., gives an Analysis of 100 Cases of Refraction with Special Reference to Headache. 4. George F. Keiper, M.D., La Fayette, Indiana, contributes a paper entitled "When to Operate for Ripe Senile Cataract in one Eye, the other Eye possessing useful vision." The author argues that the patient if successfully operated on has a larger field of vision which is a source of protection from accidents the cause of which may be due to the blind side; that the dangers and difficulties of extracting an over-ripe lens are avoided; that the patient has continuous vision since the other eye is not usually affected; that he has more comfort with vision in both eyes; and finally that his appearance is better. Additional arguments might be advanced that in case of failure there is less disappointment on the part of the patient as he can still see well and that important information in regard to the habits or peculiarities of the patient is sometimes obtained from the first operation. 5. M. V. Ball, M.D., of Warren, Pennsylvania, gives the details of a case of Death from Meningitis following Enucleation of the Eyeball. 6. H. V. Würdemann, M.D., Milwaukee, Wisconsin, has an article on Papillomatous Degeneration of the Conjunctiva. The rest of the part is occupied with abstracts of English, colonial, and foreign literature.

Response in the Living and Non-living. By JAGADIS CHUNDER BOSE, M.A., D.Sc., Professor, Presidency College, Calcutta. With 117 Illustrations. London: Longmans, Green and Co. 1902. Pp. 199. Price 10*s.* 6*d.*—Under this title Professor Bose has assembled together several interesting papers which deal chiefly with the small electromotive forces which can be detected in various living tissues and which have long been known in the case of nerve and muscle preparations as the currents of rest and the negative variation or current of action. The study of these phenomena has been extended by the author to vegetable tissues and also to inorganic substances, and it is part of the object of this book to show by records and tracings the electro-motive forces which are set up in metallic wires when they are subjected to various mechanical and chemical influences. Professor Bose points out the remarkable similarity between these tracings and those obtained with living tissues under analogous treatment. He draws the inference that there is no necessity for the assumption of vital force to account for these "phenomena of response" and he ascribes the electro-motive effects which are manifested in animal and vegetable tissues as well as in the metallic wires experimented with to physico-chemical action solely. Professor Bose's work raises the

question whether the electrical phenomena of nerve and muscle are to be regarded as of prime importance or not. Possibly they represent merely a minute waste of energy and are, so to speak, accidentally associated phenomena rather than integral factors in the chemical and physical changes which accompany conduction in nerve and contraction in muscle.

Indstilling fra Beri-Beri-Komiteen (Report of the Norwegian Beri-beri Committee) Christiania: 1902. Pp. 160.—This is a report of the Royal Commission appointed by the King of Sweden and Norway to examine and to report upon the means of treating and of preventing beri-beri on Norwegian ships. It contains consular reports, reports of masters of ships, and a careful analysis of many points which have been believed to be important in the study of beri-beri. With the report we have received a letter from the President of the Commission, Professor Uchermann, who expresses the opinion that beri-beri is an intoxication by tainted animal or vegetable food (on ships especially by canned food, in Asia mainly by tainted rice), and that it is not a specific infectious disease. The report is interesting and parts of it are in English.

Electricity in Medicine and Surgery, including the X Ray. By WILLIAM HARVEY KING, M.D. With 116 Illustrations. New York: Boericke and Runyon Co. Pp. 296.—This book is divided into two parts which are paged separately. The first deals with apparatus, with x rays, and with physiology and diagnosis; and the second treats of electro-therapeutics proper. The whole book is characterised by a want of conciseness in description and the treatment of many of the subjects is very inadequate. The account of the reaction of degeneration is poor and without originality. Under the heading of Incontinence of Urine no reference is made to the condition of nocturnal enuresis, which is so favourable a subject for electrical treatment. The important subject of the treatment of injuries of nerves (including division of nerves) has one page devoted to it, and what is there said of the two quoted instances of divided nerves is almost ridiculous. Under the heading of Infantile Paralysis the author states that the application of faradism for purposes of treatment in this disease is incomprehensible. From what is written on the subject of the electric bath it is clear that Dr. King has no practical experience of it. Wehnelt's electrolytic interruptor is a "strange little instrument" and the description given of it is not precise, and so on. Incorporated in the book is a chapter by Dr. Freudenberg of Berlin on Bottini's operation for the treatment of enlargement of the prostate. It occupies 47 pages and is well written and good.

The Amateur's Greenhouse: a Complete Guide to the Construction, Heating and Management of Greenhouses; the Propagation and Cultivation of Plants adapted for Growing therein; with a Description of the Insect, Animal, and Fungoid Pests affecting Plants, and Remedies for their Eradication. By T. W. SANDERS, F.L.S., F.R.H.S., editor of *Amateur Gardening* and *The Profitable Farm and Garden*, author of the "Encyclopædia of Gardening," "Cultivated Roses," &c. Illustrated. London: W. H. & L. Collingridge. Pp. 386. Price 5*s.* net.—This is practically a new work, although it is founded on one by the late Mr. Shirley Hibberd. In the first place Mr. Sanders rewrote the chapter on greenhouse construction for a new edition of the old book, and when the present edition was wanted the rest of the book was rewritten. "The Amateur's Greenhouse" in its present form is a practically written illustrated volume which should prove of great use to amateur gardeners, and especially to those who do the work themselves. The author's experience as the editor of *Amateur Gardening* has been of great service to him in showing on what particular points information is chiefly wanted by a large and increasing class of readers who love flowers but have not at their command large sums of money to spend on them, while they yet have sufficient time at their disposal to give them a good deal of their personal attention. The first part of the book furnishes a description of the construction of greenhouses and of the different methods which may be adopted for heating these structures, a section is devoted to general rules as to the management of greenhouses, and this is followed by an extremely good chapter on the propagation of plants. Greenhouse pests are described in a few pages and this section might advantageously be extended. The main part of the volume is occupied by a description of popular greenhouse plants, arranged alphabetically—a plan which has obvious advantages and no less obvious disadvantages, but is probably the best which could be adopted for a work of this kind. Many of the illustrations of the plants are taken from photographs; they are of unequal merit but most of them are good. The few remarks on grafting are not particularly helpful. The modes of grafting are not illustrated and the description of the operation is meagre. Many of the directions given as to the selection of plants and the way of growing them are admirable; there is, for example, some sound advice on the growing of annuals in pots, which will be found most useful to amateurs who have only a very limited space at command, and it is to such readers that the work will prove most useful.

TENTH ANNUAL REPORT (FOR 1901) OF THE MEDICAL OFFICER OF HEALTH OF THE ADMINISTRATIVE COUNTY OF LONDON.

SECOND NOTICE.[1]

THE housing of the London poor is one of the "burning questions" which the London County Council has for years past endeavoured, hitherto not altogether successfully, to solve; but it is as a matter vitally affecting the public health that Mr. Shirley Murphy systematically devotes to this question so large a share of his attention.

A special and novel feature in the present report is the attempt to classify the population of London, not, as is commonly done, according to the mere density of dwelling-houses on area, but according to the degree of aggregation of persons in each room and according to the proportion of one-, two-, three-, and four-roomed tenements in the several districts compared. This has been possible solely on account of the mode of publication of the census returns which were issued complete for London at an early date. The report contains two important tables showing the amount of overcrowding existing in the county of London as a whole in the years 1891 and 1901 respectively, the differences in area between the present "administrative county" and the former "registration county" being so slight as scarcely to affect the results. Tenements of less than five rooms have diminished in number, the fall being particularly apparent in the case of single-roomed tenements. The average number of occupants per room has also declined in all classes of dwelling, but the greatest decline has again been manifest in the case of tenements of only a single room. The relative number of so-called "overcrowded tenements" and also the number of their occupants in the poorer parts of London showed a considerable reduction in 1901 as compared with the previous census year. Speaking generally, we learn that a considerable improvement has taken place in the manner in which the people of London were housed in 1901 in comparison with 1891; in other words, over-crowding in the metropolis as a whole has declined during the last 10 years, both in quantity and in intensity. Unfortunately, as a consequence of the changes in boundary which have taken place under the London Government Act of 1899, the areas of the present metropolitan boroughs are not

[1] The first notice was published in THE LANCET of Jan. 24th, 1903, p. 259.

in all cases comparable with those of the sanitary districts which they have replaced, so that the amount of local overcrowding at the two periods cannot be uniformly contrasted. Mr. Shirley Murphy has, however, given a table which contains full particulars as to overcrowding in tenements of less than five rooms in each of the sanitary districts of London. According to the figures given, overcrowding, as measured by the proportion of the population living more than two in a room, is exceptionally prevalent in the areas constituted by the eastern and central groups of boroughs, in which areas, we observe, and perhaps mainly for the foregoing reason, the rate of mortality is constantly excessive and higher than in any other part of London. It will be noticed that in Lewisham, where only 3·5 per cent. of the population occupy tenements of one room, the death-rate, corrected for age-constitution of the population, does not exceed 13 4 per 1000 living, whilst in Holborn, where the proportion occupying single-roomed tenements averages 27 per cent., the corrected death-rate is 22 7 per 1000. Again, the proportion of population living in two-roomed tenements was equal to 32 7 per cent. in Finsbury, where the corrected death-rate averaged 23·1 per 1000 (the highest in London), whereas the proportion inhabiting two-roomed tenements in Hampstead, which registers the lowest death-rate in London, does not exceed 13·7 per cent.

Of the health of the metropolis as a whole in 1901 Mr. Shirley Murphy has a satisfactory account to give. Judged by the general mortality from all causes, uncorrected for age- and sex-distribution of population, the year 1901 was the healthiest on record, the death-rate from all causes being only 17·1 per 1000 of the population. Compared with the previous decennium, the London death-rate in the year referred to was considerably lower at each age-period of life and for each sex. The mortality from epidemic diseases in the aggregate showed a decided reduction and so did that from pulmonary and other forms of tuberculosis. The one disease which formed, as in previous years, a serious exception to the rule, is cancer, which accounted last year for a mortality considerably in excess of even the high decennial average. In order to ascertain the true local incidence of fatal cancer in relation to population a useful table is for the first time inserted in this report, showing the actual number of deaths from cancer which rightly belong to each metropolitan borough, after due distribution of the deaths taking place in hospitals and workhouses.

With commendable promptitude, which other authorities might with advantage emulate, Mr. Shirley Murphy has included in his report an extended life table by means of which the error attaching to ordinary death-rates, by reason of differing age-constitution of population, may be eliminated. In a table at p. 13 the number of deaths that actually occurred in the year 1901 at each age-period and for each sex is compared with the number of deaths that would have occurred had the rates of mortality in the previous ten years been maintained throughout 1901. The number of lives gained in the latter period is also shown, and this gain is exhibited in terms of "life capital," which is obtained by applying the mean future lifetime (from the life table) to the number of lives saved at each age-group. Thus we learn that in the year 1901 there has been a saving of 9289 lives in London, representing a gain to the community of 337,635 years of "life capital." In the metropolis, as in all large urban communities, the age-distribution of the population is seriously affected by migration, but Mr. Shirley Murphy points out that in London, at any rate, the immigration of young adults exercises a favourable effect on the death-rate. For this factor, however, the life table affords only a partial correction. In so far as migration disturbs the age-distribution of the population its effects are compensated for by the life-table method, and no allowance need be made in this direction for the effects of migration; but these effects are not limited to a mere disturbance of the composition of the population in regard to sex and age, and it will readily be understood that the average immigrant who probably comes to London from the country is likely to be healthier and more robust than the average dweller in towns. Migration therefore must be looked upon as probably altering the character at least as much as the age-constitution of the population, and the life-table method cannot adequately compensate for disturbances of this nature. In order to exemplify the effect of migration a table is given in the report showing the expectation of life and the probability of living one year at certain ages (1) in London and (2) in the so-called "healthy districts" of the Registrar-General. Migration, however, in London appears to be a diminishing factor, for the proportion in the total population of London-born persons is steadily increasing year by year. The proportion of London-born females is smaller than that of London-born males—a fact which may probably be accounted for by the immigration of females belonging to the class of domestic servants. The influence of the influx of healthy lives is well shown in the table referred to, and this process appears to affect the figures relating to females more than those relating to males. It further deserves to be mentioned that a larger proportion of females than of males probably return to their homes in the country when overtaken by sickness or by advancing age.

Looking Back.

FROM

THE LANCET, *SATURDAY*, FEB. 5, 1825.

MATERIA MEDICA.

Parigline, or the active principle of the Sarsaparilla.

THE science of vegetable chemistry has been brought to great perfection by the French physicians, and their discoveries have induced the chemists of other countries to apply themselves to the investigation of the different natural productions used as remedial agents. The advantages which have already accrued to the profession from the discoveries of the quinina, and the salts of opium, have been exceedingly great; and there is no doubt that every article of the materia medica might have its active properties extracted if a careful analysis were made. Sarsaparilla has long been known to the public as a very useful remedy for various diseases, and it has lately been made the subject of examination by M. Galileo Palotta, an Italian physician, who has discovered in it that which he considers its active principle, to which he has given the name of parigline.*

REVIEW.[1]

A full account of the system of Friction, as adopted and pursued with the greatest success, in cases of contracted joints, lameness, &c., &c. By WILLIAM CLEOBUREY, M.R.C.S., &c. 8vo. pp. 170. Oxford, 1825. Third Edition.

Our author has cited two or three cases of contractions following disease of the knee and hip-joint, one of which we shall insert.

"Martha Mayland, 16 years of age, or thereabouts, had been for a considerable time under the care of several surgeons, for what was supposed to be a disease of the hip joint. Blisters, &c. had been applied; and when I first saw her she had an immense issue in the neighbourhood of the hip joint. This I directed to be immediately healed, and it was my intention, as soon as this was done, to proceed in the manner described in the former cases; but here I was anticipated in my practice by a noted bone setter, I believe Mr. Thurland, of Charlton,† who laid hold of the limb, and extended it in a similar manner. The result was the same; the girl recovered the use of her limb."

* M. Miquel, the editor of the *Gazette de Santé*, from a number of which publication (Jan. 5) we have taken the substance of this account, has adopted a curious species of etymological reasoning in his attempt to trace the origin of the word *parigline*, he says, "*doubt sans doute du nom latin de la plante*, smilax sarsaparilla." This is like the assertion of a learned bibliographer who said that *alfana* came from *equus*, but admitted, at the same time, that it had changed its character in the descent.—ED. L.

† This gentleman generally intoxicated his patients previous to the operation; and his method of effecting the separation of adhesions situated round the head of the femur, was as follows:—He placed the patient on a bed, with her face downwards, and made the pelvis a fixed point, by kneeling with one knee on the sacrum. He then passed his right arm under the femur, and making a lever of it, forcibly extended it backwards towards the ear till the adhesions gave way. In this manner he succeeded in nine cases out of fourteen which had baffled the regular practitioners. The other five he had too much prudence to attempt, as the joints were either under the immediate influence or effect of inflammation; or portions of bone had exfoliated from them, indicating that anchylosis had taken place.

Mr. Thurland is now dead, and was the last of a family who had practised this art for nearly a century.

[1] Only a portion of the review has been transcribed.

THE LANCET.

LONDON: SATURDAY, FEBRUARY 7, 1903.

Idiopathic Pernicious Anæmia.

THERE are few subjects in medicine more interesting and perhaps more intricate than that which has been so exhaustively investigated by Dr. WILLIAM HUNTER whose latest words upon it appear elsewhere in these columns. We are sure that they will receive the attention invariably paid to the original investigator, especially when, as in this instance, his work tends to throw much light upon obscure places. Nor does he speak in uncertain tones. He has arrived at very definite and clear conclusions as to the real nature of pernicious anæmia, conclusions which may not after all be found to be so much at variance with the work of others as he appears to think. For we may at the outset venture to remark that in all that has been written upon this subject during the past 30 years, in that vast superstructure which Dr. HUNTER ingeniously exhibits as being built over BIERMER'S foundation, there has always been in the background a class of cases which have defied attempts to assign to them a definite etiology—cases, doubtless, of the kind which ADDISON had in mind in the memorable passage of his writings. Nor would it be extravagant to assert that since ADDISON'S day the advance of knowledge has shown that these so-called "idiopathic" forms of anæmia are far more limited than he surmised and that BIERMER and all who followed him have done great service in demonstrating the conditions that may contribute to induce a progressive and often fatal form of anæmia. Nevertheless, there have remained untouched the bold outlines of the simple word picture penned by the Guy's Hospital physician which mark off from a host of allied states a distinct and peculiar form of disease of the blood. Dr. HUNTER has therefore done well to recall to mind the salient point of ADDISON'S observation that such a disease does exist of which the main characteristic is a severe and progressively increasing anæmia "without discoverable cause."

We must refer our readers to the text of Dr. HUNTER'S paper for his close and searching criticism of recent literature on pernicious anæmia, merely remarking that the criticism appears to us to be sound. Indeed, from the standpoint assumed by the critic—a conviction that the condition described by ADDISON is that of a disease *sui generis*, as specific as any other specific affection—there is little room for any other kind of appreciation of these writings. It is obvious that the "pernicious anæmia" of BIERMER and the "pernicious anæmia" of every subsequent author—Dr. HUNTER alone excepted—embrace much more than a single pathological or nosological entity, and we believe that this was pointed out in this country more than 20 years ago. The great advance made mainly by Dr. HUNTER'S investigations has been in the direction of revealing the true nature of ADDISON'S "idiopathic" affection. By his researches on hæmolysis and his observations on the clinical and pathological characters of this form of pernicious anæmia Dr. HUNTER has given an explanation of the disease which is thoroughly in accord with modern scientific hæmatology.

So far we have taken it for granted that those who have followed BIERMER'S lead in the attempt to unravel the causes of pernicious anæmia must of necessity have dealt with many conditions which would not be regarded by Dr. HUNTER as strictly falling under that category. It might, however, be objected that this is not true, and that, as a matter of fact, all these observers have overlooked the essential nature of the affection which they described. Happily, we are saved from so bewildering a conclusion by the scheme drawn up by Dr. HUNTER who keeps ADDISON'S idiopathic anæmia carefully apart and who declares that this, the real form of pernicious anæmia, bears the impress of distinctive characters. We gather now that these differences are less clinical than pathological and above all etiological. The specific affection is "idiopathic" (Addison) or rather "hæmolytic" (Hunter), whilst all other cases which conform clinically to the type of a pernicious anæmia constitute a motley congeries of conditions all tending to the same end of impoverishment of the blood. The causes which operate to bring about such a state are multifarious, ranging from insanitary surroundings to intestinal parasites, from gastro-intestinal defects to nervous shock, from insufficient and improper diet to toxic and septic agencies. The old question is always recurring and that is, Why is it that exposure to such influences and agencies should in one subject lead to a fatal and pernicious disorder of the blood and in another to comparatively slight derangement? Is there another factor at work, and, if so, of what nature is it? Hence some acute observers have been forced to believe in the existence of an underlying predisposition—never a satisfactory solution to etiological problems.

It is a singular position to which Dr. HUNTER has led us and we hope that his clear and decided views will be carefully considered. He has brought us back to ADDISON'S description of the disease only to demolish its essential feature—namely, its idiopathic character, but of this certainly no one will complain. In the ruins of the vast superstructure which etiologists have erected over BIERMER'S work this specific disorder is not to be found. The idiopathic disease is no more idiopathic than is typhoid fever. It is a definite entity, specific, infective, hæmolytic, presenting characteristic local lesions (especially a peculiar form of glossitis) and "connected ..... in all cases with an exposure to drain poison." It only remains to discover its special bacillus and the triumph of the Addison-Hunter anæmia over the Biermer-Ehrlich anæmia will be assured. For the latter, according to Dr. HUNTER, is no entity; it is a mass of etiological rubble which has been heaped together by the ingenuity of many minds vainly seeking for causes which, on scrutiny, prove to be inadequate to explain every case. There is no gainsaying the advantage of arriving at so definite, if humiliating, a conclusion, and we must hasten to recast our nosology accordingly. For the practical outcome of such considerations is the total reversal of the situation as it was when BIERMER wrote. It

was then the endeavour to seek for a satisfactory explanation of the occurrence of pernicious anæmia and it was found that when all etiological factors had been exhausted there still remained a residue of "idiopathic" cases. Now we learn that the only condition entitled to be termed "pernicious anæmia" is just that which was neglected by those observers and that it alone possesses a single and well-defined etiology. It is in the demonstration of this definite character that so much is owing to Dr. HUNTER, and we doubt not that by following up his line of inquiry much will be gained, not only in the direction of clearness of conception, but in the treatment of this grave disease.

Multiple Pregnancies.

THE subject of prolificacy and multiple pregnancy has always excited the greatest interest amongst both ancient and modern writers. We find ARISTOTLE, who thought that the population should be fixed as regards numbers, recommending legislation to prevent its increase and, as he thought, the consequent deterioration of the race. Whether we regard multiple pregnancies as a result of heredity, or as an example of atavism, or merely as a consequence of undue prolificacy, we are confronted with problems of much interest. It is, indeed, only of late years that our knowledge of the laws of fecundity have been based upon well-ascertained facts. The influence of heredity in the production of multiple births has long been a matter of popular belief, and the investigations of numerous observers have shown that this belief is well founded. GOEHLERT, from a study of genealogical tables which enabled him to ascertain the fruitfulness of certain families throughout several generations, has found that the tendency to the production of multiple pregnancies is undoubtedly transmitted from parent to child, and that the hereditary influence is decidedly greater when not only the mother but also the father are members of such prolific families. Dr. J. W. BALLANTYNE has published some most interesting cases of this kind, in which the relationship between large families and multiple births are well shown. One of the most striking is that of a woman who had 22 children in 18 confinements—four times twins and 14 single births; one of her sisters had had triplets and another had given birth to twins. The influence of the male parent has been pointed out by GOEHLERT and is illustrated by the case recorded by MERRIMAN. It is that of a woman who had 21 children in seven successive births. They were all born alive and 12 survived. That some of the credit for this extreme fecundity may justly be ascribed to the father would seem to be shown by the fact that a female servant seduced by him gave birth to triplets who lived for three weeks. LEROY quotes the case of four brothers in whose family twin pregnancies in the parents of a collateral branch had been observed. All four were the fathers of twins, three of them twice each and the fourth four times. Possibly this record afforded the foundation for the story of the French family, the male members of which had acquired such a reputation as the fathers of twins and triplets that after a time no woman could be found who would consent to marry any one of them. If we may accept the observations of HELLIN it would appear that the occurrence of multiple births is directly connected with a relatively large number of egg follicles in the ovary and is due to a persistence of the embryonic condition of that organ in which the number of follicles is very much greater than it is at subsequent periods of life. The chances of triplets surviving are but small. RUPPIN has calculated that the mortality of the children in twin pregnancies is double and in triplet pregnancies four times that of the mortality in single births. The case, therefore, recorded in the present issue of THE LANCET, at p. 397, by Mr. GEORGE BATE, is one of much interest, since the children, three girls, were alive and well one year after birth. The fact that more boys than girls are born in the population as a whole appears to hold good in the case of triplets. The figures given by RUPPIN show that the commonest combination of sexes is two boys and one girl, then one boy and two girls, then three boys, and, lastly, three girls. According to him the relative proportion of the two sexes in this variety of multiple pregnancies is 104 boys to every 96 girls. The interdependence that exists between general prolificacy and multiple births is shown by the statistics of the two conditions. In France, for example, where the general prolificacy is low, twin pregnancies occur about once in every 92 births, as compared with a general frequency of about once in every 80 births, according to HELLIN. He finds that the frequency of multiple births varies not only in different countries but in different districts in the same country. The formula he gives is a convenient one for estimating roughly the frequency of the occurrence of multiple births. If twins be taken as occurring about once in every 80 births, then 80^2, or 1 in 6400, represents the frequency of the occurrence of triplets; 80^3, or 1 in 512,000, that of quadruplets; and 80^4, or 1 in 40,960,000, that of quintuplets.

The Treatment of Congenital Dislocation of the Hip.

THE mind of the public has recently, with the assistance of the daily press, been much exercised about the manipulative achievements of Professor LORENZ. Knowing nothing of the nature of congenital luxation of the hip the lay mind is ready to look upon the LORENZ method as a revelation—as the invention of a novel form of "bloodless" surgery destined to replace ordinary methods. We hear of hospitals being founded where bloodless surgery is to be practised and where no cutting instrument is ever to be used. It is difficult to say with whom these erroneous ideas originate; probably in the daily press zeal has outrun knowledge and it is with a good intention that "the new method" has been boomed. For the due consideration of the best treatment of congenital dislocation of the hip it is essential to understand the etiology and pathology. In the vast majority of the cases of congenital dislocation of the hip-joint the two bony surfaces which should enter into the joint are misshapen. This is in part due to an arrest of development and in part to an absence of the mutual moulding action between the head of the femur and the acetabulum. As a result the two bony surfaces do not fit and it is impossible in many cases to replace the head of the

femur in the acetabulum since there is no acetabulum to receive it, or so small and ill-developed a cavity that it is impossible to retain the head in position even when it has been replaced. For the relief of this serious deformity three methods of treatment have been devised. Mere hip-belts can hardly be considered curative, though by limiting the mobility of the head of the femur they do tend to improve the gait. The first attempts which aimed at being really curative were made by the elder PRAVAZ; he was followed by BUCKMINSTER BROWN. Their methods were not essentially different and consisted in extension, lasting many months, applied to the affected limb, and, later, passive movements were carried out. The results were hardly commensurate with the time and the assiduous attention required by the method and at the present time it is almost entirely disused. The next phase in the treatment was the adoption of an "open" method; the hip joint is cut down upon, the acetabulum is deepened, restraining muscles and ligaments are divided, the head is replaced, and the limb is fixed by a plaster-of-Paris splint. In some cases the misshapen head of the femur is pared down until it fits more neatly into the acetabulum. This method was introduced by HOFFA and modified by LORENZ, and in suitable cases gives fair results. The dangers from sepsis and hæmorrhage are by no means negligible. A third method yet remains, this is the "bloodless" method of forcible reposition. It was originally introduced by PACI, but it has been modified by LORENZ who has abandoned his "open" operation. It consists in forcibly breaking down the pelvic attachments of the muscles, especially the adductors, which resist the replacement of the head. Then by forcible abduction of the thigh the head of the femur is brought down into the position of the acetabulum. In its passage downwards the head may sometimes be felt and heard to pass over a ridge which probably represents the upper and hinder rim of the acetabulum. This is the sound of "the bone returning into its socket" which has much impressed the popular mind. To retain the head at the acetabulum the limb is fixed by plaster-of-Paris in a position of extreme abduction, and the plaster splint is retained for six months. During this time the pressure of the head of the femur may tend to some extent to hollow out the acetabulum by causing absorption, but it is very doubtful if the action is great. After the plaster splint is removed the extreme abduction slowly disappears, without, it is said, any reproduction of the dislocation. It would be premature to express at present any decided opinion as to the ultimate results of the method, especially as it has not yet been performed in this country sufficiently frequently to provide material for an opinion, but we are at least justified in saying that it cannot claim to be applicable to all forms of congenital hip dislocation, for in some cases no trace of an acetabulum can be found. It is true that the risks of sepsis and hæmorrhage are removed by this operation, but the tissues around the joint are violently lacerated. Some of the credit of the method should be given to PACI who first devised it, but LORENZ has applied it to so many cases—in all, it is said, more than a thousand—that his name will certainly be associated with it. A judicious hesitancy should characterise the surgical mind until we have more certain data on which to found an opinion.

Annotations.

"Ne quid nimis."

THE ILLNESS OF THE KING.

WE are authorised to make the following statement with regard to the illness of His Majesty the King. For about a week past His Majesty has not been feeling in his usual health and on Friday, Jan. 30th, he complained of feeling the cold more than usual. On Monday, Feb. 2nd, it was found advisable to postpone the journey to Chatsworth and on Tuesday, Feb. 3rd, it became evident that His Majesty was suffering from a mild attack of influenza. The attack is but slight and the King is not confined to bed, but only to his room. Care, of course, is necessary, since influenza predisposes a patient to the attack of other infectious diseases, but so far there is no cause for anxiety. There have been several cases of influenza among the members of the household.

THE HOSPITALLERS OF ST. JOHN OF JERUSALEM.[1]

ST. JOHN'S GATE in Clerkenwell is known, we daresay, to few Londoners, but most persons are acquainted, by sight at any rate, with the members of the St. John Ambulance Corps who are always much to the fore on occasions when great crowds gather together in the metropolis. Few, however, connect these ambulance workers with a military-religious order who fought to preserve the holy places from contamination by the followers of Mahomet, but the Rev. W. K. R. Bedford and Lieutenant-Colonel Holbeche, respectively the genealogist and librarian of the Order in England, have together compiled a most interesting history of the rise, fall, and resuscitation of this great Order. They refer to the foundation of a hospitium for pilgrims by some merchants of Amalfi, but they do not give the circumstances surrounding the foundation. According to that exceedingly interesting book, the Evagatorium[2] of Felix Faber, the foundation occurred in the reign of Charlemagne. At this time some merchants from Apulia brought some wares to the East previously quite unknown there. These wares were hazel nuts (*avellanæ*). Some of these nuts came into the hands of the King of Egypt who at that time also ruled over Arabia, Palestine, and Judea, and this monarch was so delighted with the nuts that he granted a boon to the merchants of whatever they liked to ask. Therefore, being charitable and pious men, they obtained leave to found a rest-house for Latin pilgrims in Jerusalem. As years went on the multitude of pilgrims increased and another hospitium was founded and dedicated to St. John the Almoner who was formerly Patriach of Alexandria, and the pilgrims were looked after by both monks and nuns who were Benedictines, but as yet there was no definite Order of Hospitallers. In the reign of the third Latin King of Jerusalem, Baldwin by name, such a multitude of pilgrims came to the city that the abbot and the abbess of the monastery and the convent respectively appointed two lay people to look after the pilgrims. One was a nobleman named Gerhard and the other was a noble Roman lady. These two people were the first to assume the black mantle with the white cross and they were soon joined by others, so that in the year 1118 they were constituted into a regular

[1] The Order of the Hospital of St. John of Jerusalem, being a History of the English Hospitallers of St. John, their Rise and Progress. By W. K. R. Bedford, M.A. Oxon., Genealogist of the Order, and Richard Holbeche, Lieutenant-Colonel, Librarian of the Order. London: F. E. Robinson. Pp. 218 and index. Price 7s. 6d. net.

[2] Hassler's Edition, vol. ii., pp. 246 and 274.

Order called Johannites from St. John the Almoner. Other people called them Hospitalarii because they served in the hospital, but, according to Felix Faber, they did not take St. John the Baptist as their patron until they established themselves in Rhodes. So far Felix Faber. After the taking of Jerusalem in 1187 the Order of St. John was allowed by the courtesy of Saladin to stay in its hospital and convent for the space of one year. The next resting place of the Order was Acre. Thence, when the whole of Palestine fell into Moslem hands, they moved to Cyprus and from there to Rhodes. Again being driven out in 1523 by the Moslems they went to Malta and here the Order reached at once its highest pitch of glory and its lowest ebb of dishonour, for in 1798 the remnant of the Order treacherously surrendered the island to Napoleon. The English "langue" was free from any share in this shame owing to the Order in England having been in abeyance since the robbery of the religious houses by Henry VIII. The Order was established in England early in the twelfth century, the first house being in Clerkenwell, and priories were also founded in both Ireland and Scotland. The English "langue" was, however, formally revived in 1827 and after some vicissitudes received a Royal charter in 1880. The headquarters of the Order are again at St. John's Gate in Clerkenwell and the care of the sick in hospital is still carried on by the Order at the Ophthalmic Hospital in Jerusalem, while ambulance work, both in civil and military life, together with the providing of nourishing meals for convalescents discharged from hospital, also forms part of its labours. All members of the Order and many who are not members will find both pleasure and profit in reading the history to which we have referred in these lines.

THE GERMAN WOUNDED DURING ADMIRAL SEYMOUR'S EXPEDITION.

A REPORT by Staff Surgeon-Major Schlick, who was in medical charge of the German detachment which accompanied Admiral Seymour in his expedition towards Peking in June, 1900, is exhaustively reviewed by Dr. Gros in the *Archives de Médecine Navale* for January. 79 men of the detachment sustained gunshot wounds and one man received a sabre cut. In eight instances the head was the seat of injury, in five the neck, in eight the chest, in two the abdomen, in one the back, in two the pelvis, in 18 the upper extremities, and in 36 the lower extremities. Half of the gunshot wounds were caused by old-fashioned weapons of large calibre, the remainder being due to small-bore rifles of modern make. Only a small percentage of the wounds was inflicted at short range, the distance for the most part exceeding 1000 yards. At long ranges the orifice of entrance was small and that of exit only slightly larger, the track between the two running directly as though it had been produced by a stabbing instrument. In several instances long-range missiles of small calibre were found imbedded either in a soft part or in a bone and wherever a fracture was noted the bone was invariably splintered. Three cases of penetrating wound of the cranium were followed by immediate death, the orifices of entrance and exit being both small, while the track between exhibited no appreciable traces of explosive action. Wounds of the face were benign and the same could be said of those that penetrated the thorax. In all the wounds of the neck, however, the prognosis was most unfavourable. In each of the two abdominal cases the liver was pierced but no reaction occurred and the patients recovered with astonishing rapidity. Surgeon-Major Schlick has a great deal to say regarding the behaviour of his patients after they received their wounds. In scarcely any two of them was the general mode of reception the same. Sometimes it was a flow of blood which furnished the man with the first intimation that he had been hit. Others said they felt as if some person had struck them with a stick. In a few instances the phenomena of extreme nervous excitation made their appearance. "In such wounds," says Surgeon-Major Schlick, "it is very difficult to determine how much is due to shock or to injury of the spinal cord and its membranes, or to intra-medullary hæmorrhage, or to commotion of the organ." Amongst the wounded there were those who had sustained injuries of the thorax but exhibited the signs of paralysis affecting the lower limbs which lasted several hours, and also others who acted "like hysterical females," at one moment laughing and the next crying. In most these phenomena disappeared after a few hours, but in a few they persisted for six or eight days. The proper treatment of these 80 wounded men was rendered very difficult by the lack of necessaries. Dressing material, antiseptics, transport, suitable food, all the essentials of modern surgery, were either insufficient or else absolutely wanting. Three operations only were performed, their urgency being imperative—namely, one amputation and two extractions of projectiles which by their situation were causing intolerable agony. In general the treatment was expectant—occlusion of orifices by sublimated pads but without washing. The officers' shirts and mosquito curtains had to be utilised as dressing material. Split bamboos served for splints as well as in some cases the telegraph wires which had been cut by the Boxers. And yet in spite of all drawbacks the results were not unfavourable. In addition to the four men who were killed on the spot four more of the wounded succumbed through internal hæmorrhage. All the rest did well.

TYPHOID FEVER OR PUERPERAL SEPSIS?

PYREXIA in the puerperium may give rise to the problem of differential diagnosis between typhoid fever and septicæmia which sometimes presents difficulty. The *Boston Medical and Surgical Journal* of Dec. 18th, 1902, contains two interesting papers on typhoid fever in the puerperium. Dr. H. T. Swain points out that while typhoid fever in the puerperium is not very rare, cases such as the following one, in which the onset is so sudden as to simulate sepsis, have been seldom recorded. A woman was admitted to the Boston Lying-in Hospital in her third labour. She noticed no symptoms different from those of her previous pregnancies. She had an easy labour in the early morning. In the evening the temperature rose to 101·5° F., but the pulse-rate was not elevated. Next morning the temperature was 102·5° and the pulse was 100; in the evening the temperature was 104·2° and the pulse was 130. During the day diarrhœa with "pea-soup" stools began. There was slight delirium and the tongue was coated in the centre and red at the edges. There was some abdominal distension, with general tenderness. The lochia and milk were scanty. It was difficult to determine the character of the lochia because of the continual diarrhœa and the fæcal odour about the patient. Inspection of the vagina and cervix revealed nothing abnormal. There was a macular eruption which appeared and disappeared without apparent cause. On the third day the symptoms persisted and the Widal and diazo reactions were negative. The leucocytes were 3400 per cubic millimetre. On the fourth day rose spots appeared in abundance and the spleen was felt. On the fifth day the Widal reaction could not be obtained, but the diazo reaction was present. On the tenth day the Widal reaction was still negative. It was not again sought for. At the end of a month the patient was discharged well. The sudden rise of temperature and of pulse-rate without prodromata resembled sepsis rather than typhoid fever. The scanty secretion of milk was useless in differential diagnosis, because it would result from any febrile state. As to the lochia, they may be unchanged in quality and quantity in sepsis. The general abdominal

distension with slight tenderness might occur in either sepsis or typhoid fever. Pelvic tenderness may be absent and the spleen may be enlarged in puerperal sepsis. The diagnostic points in favour of typhoid fever were the low leucocyte count and the rose spots. The following case is recorded by Dr. E. P. Stickney. A primipara was confined on Sept. 7th. Convalescence was uneventful except that urine could not be passed in the recumbent posture and catheterisation was necessary. On the 22nd the patient was permitted to sit up. After a hearty dinner she complained of dull pain in the cæcal region and frontal headache. The temperature was 101° F., the tongue was slightly coated, and there was tenderness over the cæcum and right ovary. Next day the temperature was 101·7° and the pulse was 90. The uterus was of normal size for the period of the puerperium and there was practically no discharge. On the 25th, after a restless night, during which there had been a chill, the temperature was 104·9°, the headache was severe, the cheeks were flushed, and the pain and tenderness in the right iliac region were increased. The spleen could not be felt but the upper limit of dulness was at the eighth rib. The blood gave the Widal reaction. On the 26th there were five loose brownish-yellow motions of foul odour. On the 28th rose spots appeared. Recovery ensued.

SIR GEORGE GABRIEL STOKES.

DURING the past week the announcement has been made of the deaths of no less than three well-known men of learning, by which great gaps have been created at the Universities of Cambridge and Oxford, while the worlds of literature and of science have sustained great losses. Mathematics loses an ardent student and instructor in the death of the Rev. Norman Macleod Ferrers, D.D., F.R.S., who died at the Master's Lodge of Gonville and Caius College, Cambridge, on Jan. 31st, while literature will miss a great contributor in the person of the Rev. John Earle, Professor of Anglo-Saxon in the University of Oxford. The death of Sir George Gabriel Stokes, however, which occurred on Feb. 1st, removes from amongst us perhaps our most eminent mathematician and one of our most distinguished men of science. Sir George Stokes was an example of a scholar who, in spite of his mathematical bias, yet showed practical attainment. There is not a book on physics which has not scattered through its pages abundant references to Sir George Stokes and his work in the domain of physical science. It seems to be the irony of things that he should have died (although, it must be admitted, at a ripe age) just at a time when we have been brought face to face with a new set of phenomena of which his own researches had indicated the existence. His practical investigations into the nature of fluorescence are well known. He showed, for example, that the fluorescence of a solution of sulphate of quinine was due to the extreme violet rays of the spectrum and to invisible rays of still higher refrangibility. Thus by means of such a solution the absence of rays beyond the visible part of the spectrum was made manifest, for if the spectrum is thrown on to a screen damped with this solution fluorescence is produced beyond the usual visible part. Sir George Stokes explained this phenomenon by stating that the ethereal vibrations are absorbed by the fluorescent matter which is set in vibration, the period of its vibration being usually longer, and never shorter, than the period of vibration of the ether. Phosphorescence is a similar phenomenon except that it lasts for hours after the stimulating radiation is removed, whereas fluorescence is maintained only for a short while after the light ceases to fall on the substance. Radiations of this kind have during recent years much perplexed the scientific world and a new property of matter known as radio-activity is being studied with encouraging results, a line of study suggested by Sir George Stokes's work and the researches of Becquerel. Sir George Stokes also described a number of very important experiments in regard to the phenomenon of interference and diffraction and investigated the nature of double refraction and polarised light. Probably no philosopher has done more towards unravelling the mystery of ether than has Sir George Stokes. His explanations of those phenomena depending upon the existence of the ether are marked by their lucidity and in many instances he has rendered the theory of ether tenable and consistent with well-known facts. He was elected a member of the Royal Society in 1851 when he was 32 years of age and a year afterwards he was awarded the Rumford medal in recognition of his valuable contributions on the nature of light. In 1885 he was appointed President of the Royal Society, a position from which he retired in 1890, after being created a baronet in the previous year. He had been one of the representatives in Parliament of the University of Cambridge, as was his predecessor Sir Isaac Newton. His devotion to scientific work and the results to which it has led promise to culminate in revelations not less in importance than those following the famous discovery of the laws of gravitation.

THE MEANING OF URIC ACID AND THE URATES.

THE etiology of gout has always proved a fruitful source of controversy. Although numerous suggestions have been advanced as to the precise nature of the disturbance in metabolism in this disease no definite decision has yet been reached. Most authorities have been of opinion that there is probably defective oxidation of food-stuffs, combined with imperfect elimination of the waste products of the body. Uric acid and the urates have always held an important position in the pathology of the malady, though authorities differ as to the exact rôle played by those bodies. The article by Dr. Woods-Hutchinson which was published in THE LANCET of Jan. 31st, p. 288, under the title "The Meaning of Uric Acid and the Urates" not only possesses the charm of originality but the arguments upon which it is based appear to us well worthy of serious contemplation. He maintains that there is no connexion whatever between the production of urea and of uric acid. The uric acid produced in health comes exclusively from two sources—the larger moiety, or exogenous uric acid of Chittenden, from the nucleins and purin bases of the food; the smaller, or endogenous moiety, from the destructive metabolism of the nucleins of the body-tissues. Dr. Woods-Hutchinson maintains that it is the endogenous moiety alone which is increased in gout and lithæmia. Further, he says, gout and lithæmia are mere symptoms, names for a miscellaneous group of chronic toxæmic processes of widely-varied origin, characterised by the production of uric acid and the urates. As most of the toxins which set up this destructive metabolism and consequent uric acid production are of intestinal origin or entry the diet prescribed in gout should be regulated solely with regard to the diminution of intestinal fermentation and putrefaction; hence the animal or nitrogenous foods need not be strictly limited or interdicted in gout, but as these foods, from their much more appetising and attractive flavours, are more likely to be taken in excess of the oxidative powers of the body some caution must be exercised so that the patient does not take undue advantage of the privileges as to diet which are allowed him. A still more emphatic statement is to the effect that as uric acid and the alloxur groups are not toxic, or at best feebly so, and are not the cause of gout, the prohibition of even foods rich in nucleins and purin bases—such as red meats, roe, and sweetbreads—is declared

to have no rational basis and to be clinically of doubtful utility except by diminishing the attractiveness of the dietary. There is much in Dr. Woods-Hutchinson's article worthy of study, although there is no doubt his views are contrary to some of those upheld by leading English and foreign authorities.

THE DISTRIBUTION OF PLAGUE.

As regards the Mauritius a telegram from the Governor, received at the Colonial Office on Jan. 30th, states that for the week ending Jan. 29th there were 5 deaths from plague. As regards Cape Colony the medical officer of health of the Colony states that no case of plague has been discovered at any place in the colony during the week ending Jan. 10th. Two cases remained under treatment at the Plague Hospital, Port Elizabeth, at the end of the week, the last having been discovered there on Dec. 30th, 1902.

THE FALLING BIRTH-RATE IN FRANCE.

IN view of the steady decrease in the yearly numerical mean of births in France, which has fallen from 932,000 in the period 1881–86, to 884,000 in the period 1886–91, and to 877,000 in the period 1891–96, the article by M. Pinard and M. Richet in the January number of the *Annales de Gynécologie et d'Obstétrique* upon the Pathological Causes of the Diminution of the Birth-rate in France is of much interest. In presenting the results of their investigations they show very clearly that a fall in the marriage-rate cannot be accounted as the cause. The percentage of the marriage-rate is practically the same in France as it is in England—viz., 7·5 per cent., as compared with 7·4 per cent. As a matter of fact the number of marriages has risen from 282,079 in 1881 to 295,752 in 1899. The first point which the writers set themselves to determine was as to how far the lessened birth-rate was due to unavoidable causes and how far it was due to avoidable causes. To answer this question they proceeded to estimate the percentages of sterile marriages amongst French people as compared with that of other countries. If it could be shown that the percentage rate of sterility due to what may be termed unavoidable causes was the same in France as in other countries, then it followed that such sterility could not afford a complete explanation of the falling birth-rate. According to Matthews Duncan and Simpson the number of sterile marriages in England was about 13·4 per 100. As their results, however, were based upon a comparatively small series of figures it was probable that the rate was rather too high. From a consideration of the French statistics available for the year 1896 the result was arrived at that amongst 2,027,739 marriages there were 233,369 in which after a duration of from 15 to 24 years there were no children, or a percentage of 11·5. It must be noted, however, that no account was taken in these figures of children who had died. To correct this source of error no French statistics were available, but from a study of those of Brazil given by M. Bertillon the writers found the proportion of childless marriages lasting from 15 to 24 years in which children had been born but had died to be about 2 per cent. Deducting this number from the percentage already given—viz., 11·5—gives a percentage of 9·5 childless marriages amongst those which had lasted from 15 to 24 years. A more correct comparison could be obtained between the statistics of Berlin and Rio de Janeiro and those of Paris, since they concerned an urban population alone and not a mixed urban and rural population. Amongst marriages which had lasted for the time already considered—viz., 15 to 24 years—there were in Berlin 12·8 per cent., in Rio de Janeiro 11·3 per cent., and in Paris 11·3 per cent. without any children. The differences were inconsiderable and did not explain the marked difference between the birth-rate of 29 per 100 of Berlin and that of 23 per 100 of Paris. The conclusion might therefore safely be drawn that the rate of sterility due to what may be termed unavoidable causes was practically the same in Paris as in other large towns. Unfortunately, although they might accept the rate of sterility—viz., about 11 per cent.—as fairly correct they were quite unable to arrive at any approximate estimate of the frequency of the commoner causes of sterility. As M. Pinard and M. Richet pointed out no doubt the commonest cause was one or other of the forms of venereal disease, particularly gonorrhœa. More especially was this the case with the latter affection, because even when apparently cured it yet frequently entailed sequelæ which produce sterility either in the male or female. If we are to accept the above deductions as correct—and there can be no doubt that they are approximately true—then we are driven to the conclusion that the falling birth-rate in France is not due to an increasing degree of sterility amongst French men or women. It is due, as the writers are compelled to admit, to the determination of French parents amongst almost all classes of the community not to have more than a certain number of children, and until the time comes when this determination can be altered the birth-rate of France is likely to continue to fall.

MEDICO-PSYCHOLOGICAL ASSOCIATION.

THE next general meeting of the Medico-Psychological Association of Great Britain and Ireland will take place at the County Asylum, Mickleover, Derby, on Feb. 12th, under the presidency of Dr. Joseph Wiglesworth of the county asylum at Rainhill, Lancashire. The educational and Parliamentary committees will meet in the forenoon, the general meeting will commence at 3 P.M., and there are ten candidates for election. Mr. F. J. Stuart will propose a motion:

That a committee be appointed to reconsider and to report on the statistics obtained by the late Tuberculosis Committee of this association.

Papers will be read on the Stereoplasm of the Nerve Elements, by Dr. W. Lloyd Andriezen; on the Care and Treatment of Persons of Unsound Mind in Private Houses and Nursing Homes, by Dr. E. W. White; and on Lunacy and the Law, by Dr. T. O. Wood. Members are invited by Dr. R. J. Legge to lunch at the asylum at 1.30 P.M. and they will dine together at the Midland Hotel at 7 P.M.

THE LEUCOCYTES IN TYPHOID FEVER.

ALTHOUGH from a diagnostic point of view in the examination of the blood in typhoid fever the importance of the leucocytic changes is largely overshadowed by Widal's reaction, yet the former are of considerable interest and importance. That a condition of leucopenia or reduction in the number of the leucocytes occurs in uncomplicated cases of typhoid fever is well known, but the nature of this reduction and its variation in the course of the fever have attracted little attention in this country. A careful study of these changes and of their diagnostic and prognostic import has been recorded by Dr. Otto Nägeli of Zürich in the *Deutsches Archiv für Klinische Medicin*, Band lxvii., S. 279. He divides the course of the fever into four stages, in which the changes are as follows. In the first stage, that of the gradually rising temperature curve, there is probably a neutrophile leucocytosis of moderate degree, which soon gives place to a reduction, and at the same time the lymphocytes are diminished and the eosinophiles completely disappear or are but rarely found; in the second stage, that of continuous pyrexia, there is a further reduction of the neutrophiles and lymphocytes, though towards the end of this stage the latter may gradually increase; in the third stage, with a remitting

type of temperature, the increase of the lymphocytes becomes very distinct and a few eosinophiles begin to reappear, but the neutrophiles decrease still further; and in the fourth stage, that of declining fever, a further diminution occurs in the neutrophiles which now reach their minimum, while the lymphocytes increase to such a degree as to exceed the neutrophiles and the eosinophiles return slowly towards their normal proportion. In the first few days after the decline of the fever the restitution of the neutrophiles begins, while the lymphocytosis persists for some weeks or even months. Dr. Nägeli explains these effects by supposing the action of a toxin upon the bone marrow, the preliminary increase and subsequent decrease in the number of leucocytes being due to a preliminary stimulation, followed by a subsequent depression analogous to the action of many known organic poisons on protoplasmic tissues, and definite changes are found in the bone marrow which lend support to this view. The blood conditions are of interest in relation to diagnosis, as definite changes occur before the development of Widal's reaction, while from the standpoint of prognosis Dr. Nägeli finds that the presence of eosinophiles is favourable as indicating a mild infection, while the absence of lymphocyte increase is unfavourable. Most complications produce a leucocytosis.

THE MEDICAL LIFE.

To the vast literature of medical addresses Mr. George Munro Smith has added a welcome item in his racy presidential lecture delivered to the Bristol Medico-Chirurgical Society at the opening of its twenty-ninth session. The address is reprinted, as a small pamphlet, from the *Bristol Medico-Chirurgical Journal* for December, 1902, and its perusal provides an entertaining quarter of an hour. Mr. Smith takes a wide view of medical life, its occupations, joys, sorrows, achievements, and disappointments, and their effects upon a man's character. In the manner in which this is done Mr. Smith shows a sense of humour and a correct appreciation of many points in the nature and relationships of both patients and medical men. We find here no great inculcations to moral rectitude, but we have a sensible estimate of the great worth to any medical man of the conscientious performance of his various duties and of the value of a cheerful spirit and a mind open both to the lighter and to the more serious aspects of the situations in which the practitioner becomes involved. Moreover, Mr. Smith gives some delightful anecdotes, one of which we would fain repeat, though it may be an old friend to many readers. The pith of it is the advice given by an eminent specialist to a lady patient to "take a saline aperient before breakfast daily and spend her morning on the downs." As a class medical men are apt to suffer from a too solely solemn view of their life. This is natural enough from the serious vicissitudes with which they mainly deal. A spice of humour, though, will alleviate their burdens and assuredly make them none the worse in practice.

THE PREVALENCE OF SMALL-POX.

AT the meeting of the Poplar Borough Council held on Jan. 29th Mr. F. W. Alexander, medical officer of health, reported that since the last meeting of the public health committee two cases of small-pox had occurred and that both patients had died in circumstances that are worth the notice of our readers. The first case was that of a female, aged 27 years, of Morant-street, Poplar, where a case had occurred previously on Dec. 20th. The patient was prematurely confined of an eight months living child on Jan. 4th and was attended by a midwife. The medical officer of health, at the request of a medical practitioner, examined her on Jan. 5th and found her to be suffering from small-pox and too ill to be removed, and in order to prevent the spread of the disease the whole of the inmates were isolated within the house, food being supplied and the rent and medical attendance being paid at the expense of the council. The firms for whom the inmates worked were notified of the state of affairs, and various medical officers of health were informed of "contacts." The midwife was interviewed and advised about disinfection. The patient died on Jan. 6th. The body was immediately placed in a coffin and removed to the mortuary, Wellington-road, and the inmates of the house were taken to the shelter. The undertaker's men also went to the shelter, bathed, and had their clothes disinfected. The second patient, the prematurely born male infant of the above patient, developed small-pox on Jan. 10th at the council's shelter and was removed on the same day and has since died. The child was vaccinated as soon as born. The husband of the deceased woman and his mother who nursed her were detained at the shelter as they were not revaccinated immediately. The other inmates were allowed to return home as soon as the premises were disinfected. The medical officer of health commended the prompt manner in which the above measures were carried out. Such prompt action by the officers no doubt prevented the spread of disease. —The Local Government Board for Scotland intimates that during the period from Jan. 16th to 31st inclusive five cases of small-pox have been notified to it, four of these occurring in the burgh of Leith and the other at Prinlaws, Leslie. The Leith cases are all traced to one source—viz., a case imported from Riga.

"RETURN" CASES OF SCARLET FEVER.

A CASE of considerable interest was recently tried at the Lowestoft County Court. A claim was made against the mayor, aldermen, and burgesses of the borough to recover the sum of £50 as compensation for damages sustained through the negligence of the defendants or their servants in discharging the plaintiff's daughter from the Lowestoft Isolation Hospital on August 29th last in a verminous and infectious condition. The child had been an inmate of the hospital for nine weeks and three days, suffering from scarlet fever, and the plaintiff maintained that in consequence of being discharged in the condition alleged the child infected two other children of the plaintiff with scarlet fever, whereby the plaintiff had suffered loss as represented by the amount of the claim. The case occupied five hours and amongst the witnesses was Dr. C. K. Millard, medical officer of health of Leicester. The question had arisen as to whether lice could be instrumental in communicating scarlet fever. Dr. Millard stated that he did not know of any authenticated cases in which infection had been so spread. We are not aware of any observations on this point, but it is certainly a matter of importance to know if infection can be carried by vermin. Scarlet fever can be conveyed from an infected person by means of fomites and as cutaneous particles are a source of infection it would seem quite possible that lice might carry with them from one person to another the pathogenic organisms. Dr. J. R. O'Brien of Lowestoft was of opinion that the fever might be transmitted by insects or flies as well as by means of linen and other clothes. The judge entered judgment for the defendants for reasons which he proceeded to enumerate. His speech was a lengthy one and dealt fully with the matter. On points of law his remarks were very interesting and doubtless correct. From the medical evidence he came to the conclusion that lice were not the cause of the spread of the disease, but we should prefer to consider this matter as well worthy of future investigation. The subject of "return" cases of scarlet fever is still an open one. The matter was under consideration at the last meeting of the British Medical Association. Dr. Millard, who opened the discussion, regarded "return" cases as essentially a "hospital

phenomenon" and recommended as the most effectual means for the prevention of such cases the isolation of convalescents from acute cases prior to discharge from hospital. The careful supervision of cleanliness in all patients about to be discharged should also be insisted upon, and under this routine would be included the freedom of the head from lice or other vermin.

THE HUNTERIAN SOCIETY.

THE annual Hunterian oration will be delivered in the London Institution, E.C., on Wednesday, Feb 11th, at 8.30 P.M., by Mr. T. H. Openshaw, C.M.G. The subject of the oration is "John Hunter: His Influence on Surgery, with some Remarks on the Treatment of Appendicitis." Any member of the medical profession can be present at the delivery of the oration. The annual dinner of the society will take place on Friday, Feb. 13th, at 7 P.M. in the Trocadéro Restaurant.

SHELL-FISH AND SEWAGE CONTAMINATION.

THE question of the pollution of shell-fish with sewage is, we are glad to see, not going to be dropped. Indeed, the subject is being discussed throughout the country by all municipal authorities and we may hope that as a result some important step in sanitation is likely to be advanced. In a recent report presented to the sanitary committee of the corporation of the City of London the medical officer of health, Dr. W. Collingridge, publishes the results of a very interesting inquiry into this question, while it is established beyond dispute by the experiments of Dr. Klein that cockles and oysters are frequently polluted with sewage. Further, there can be no doubt that shell-fish in general are often the origin of an outbreak of enteric fever. Similarly the public health committee of the London County Council presented a long report upon the subject at a meeting of the Council on Feb. 3rd, and after some discussion the recommendation of the committee was adopted, "that a letter be addressed to the Local Government Board expressing the Council's hope that in the interests of the public health the Board will as soon as possible take steps to obtain an amendment of the law so as to prohibit under heavy penalties the laying down of all edible forms of shell-fish in sewage-polluted creeks or other dangerous localities and the sale of such shell-fish for human consumption, and that all unpolluted layings, fattening beds, and storage ponds at present in use may be protected from pollution by sewage by any person or sanitary authority."

THE LATE DR. FEDERICO RUBIO Y GALI.

Dr. Federico Rubio y Gali of Seville died on August 31st, 1902, at the age of 75 years, as mentioned in THE LANCET of Oct. 11th, p. 1023. He was one of the most eminent surgeons in Spain and in recognition of his great reputation and high professional position he was among the distinguished foreigners who received the honorary diploma of F.R.C.S. Eng. on the occasion of the centenary of the Royal College of Surgeons of England. Another notable Spanish medical man, Dr. Salvador Cardenal Fernandez of Barcelona, received the honorary Fellowship at the same time.[1] Dr. Rubio's obsequies were solemnised at Seville on Dec. 6th in the presence of a great concourse of sympathetic friends and amid the animated scenes of an impressive ceremonial. We have received a long and minutely detailed account of the proceedings, for which we are indebted to a correspondent, who makes particular mention of the kind reception given to him by Dr. Ramon de la Sota y Lastra, Dean of the Seville Medical Faculty, Dr. Laborde, who retains pleasant memories of two years spent at Guy's Hospital, and Dr. Lasso de la Vega. The company, consisting of graduates and students of Cadiz and Seville, assembled in the large academic hall of the school founded in Seville by the deceased. Led by the Dean the gathering passed into the street and so into the Church of the Mother of God, which is the chapel of the medical school. The centre of this long narrow building, roofed with carved wood, was occupied by a stately catafalque, four squares of black and gold terminating above in a funeral urn. On the conclusion of Divine service the company returned to the large hall where eloquent and touching addresses were delivered by Dr. Laborde and Dr. Lasso de la Vega.

[1] THE LANCET, August 4th, 1900, p. 339.

CHOREA ELECTRICA.

CHOREA electrica, a rare nervous disease of children, was first described by Dubini in 1849. Most of our knowledge of it, however, dates from the observations made by Henoch 20 years ago. In the *Berliner Klinische Wochenschrift* of Dec. 22nd, 1902, Dr. Ludwig Bruns of Hanover gives an account of the main varieties of this disease based on a study of 30 cases. The disease is found to occur exclusively in children of both sexes, the ages varying from nine to 15 years. The characteristic attacks consist of sudden muscular shocks or contractions limited to the neck and shoulder muscles—viz., the sterno-mastoid, levator anguli scapulæ, pectorales major and minor, and the trapezius. The muscular contractions are sharp and sudden "as though induced by an electric shock"—hence the name chorea electrica. The disease, adds Dr. Bruns, is not related to Sydenham's chorea. He recognises three varieties of chorea electrica—viz., chorea electrica proper, a hysterical variety, and an epileptic variety. The hysterical variety of this affection is readily cured by the therapeutics ordinarily employed for hysteria. He records a case of this as exemplified in a girl, aged nine years, the child of a highly neurotic mother. Separation from the mother with firm and judicious management soon cured her of the trouble. The epileptic variety is very refractory to treatment, as the condition is due to a grave lesion of the cerebral hemispheres. Hydrotherapy, an open-air life, and a diet that is digestible and free from irritating or highly stimulating ingredients are among the general methods of treatment for the epileptic form and the same remarks apply to chorea electrica proper, which is rather more amenable to such treatment.

THE BRITISH GYNÆCOLOGICAL SOCIETY.

THE Fellows of the British Gynæcological Society and their friends attended the annual dinner on Jan. 29th at the Café Monico, Piccadilly-circus, London, W., in large numbers. Sir John Halliday Croom, President of the Royal College of Surgeons of Edinburgh, was accorded an enthusiastic reception on taking the chair as president of the society. Dr. S. Buckley, President of the North of England Obstetrical and Gynæcological Society, in the course of his speech while giving the toast of "The British Gynæcological Society," discoursed on the fame of the names that occurred in the lists of its officers. The society, he said, was known throughout the gynæcological world and he described how the formation of the North of England Obstetrical and Gynæcological Society had been followed by excellent results in securing good fellowship amongst its members. Sir John Halliday Croom, in acknowledging this toast, well sustained his reputation for wit and humour. The next speech was by Dr. H. Macnaughton-Jones who was intrusted with the task of proposing the toast of "Universities and Medical Corporations." He deplored the disappearance of the Queen's University in Cork. He showed how many brilliant men had been trained for useful service to the State

in the Queen's University, and explained how important it was to have teaching universities and not merely examining boards to test knowledge. After Mr. W. Parson, the Master of the Society of Apothecaries of London, had spoken in answer to the toast, Dr. F. F. Schacht said a few words, remarking that the universities had at last turned their attention to the medical aspects of the education which they provided. In giving the toast of the "Sister Societies," Dr. Heywood Smith warmly urged the foundation of a Royal Academy of Medicine. The evening concluded by the President of the Clinical Society of London, Mr. Howard Marsh, acknowledging this toast in an effective and thoughtful speech.

QUICK LUNCHES.

PROPOSALS have recently appeared in the daily press in favour of the inauguration of a system of quick lunches by which the busy man may have a substantial midday meal served expeditiously, the partaking of which shall occupy but a few minutes. We do not hesitate to ask that all our readers will impress upon their patients that the adoption of this proposal would be a wicked physiological step. The repair of the body is not a process to be trifled with in this way; eating should not be done in a hurry. The demands of business may be pressing, but the demands of the body are in reality more serious. Just as by stoking a steam engine to cramming point the fuel burns badly and the intensity of the fire is lowered, so by bolting his food the vital processes within a man's body are hindered rather than helped. Necessarily food eaten rapidly escapes in a great measure the preparatory processes of digestion and sooner or later a breakdown in the maltreated human machine supervenes. In a word, hurrying over eating is fatal to the healthy sustenance of the body.

LECTURES of the Royal College of Physicians of London for 1903 will be delivered at the College, Pall Mall East, on each of the following Tuesdays and Thursdays at 5 o'clock. Milroy Lectures: The Causes, Prevalence, and Control of Tuberculosis, by Dr. H. T. Bulstrode, on March 5th, 10th, and 12th. Goulstonian Lectures: Theories of Immunity and their Clinical Application, by Dr. A. S. F. Grünbaum, on March 17th, 19th, and 24th. Lumleian Lectures: On Infective Endocarditis mainly in its Clinical Aspects by Dr. T. R. Glynn, on March 26th, 31st, and April 2nd.

THE Eleventh International Congress of Hygiene and Demography will be held in Brussels from Sept. 2nd to 8th under the patronage of H.M. the King of the Belgians. The secretary-general of the Congress is Professor Dr. F. Putzeys. All information and programmes can be obtained from Dr. Paul F. Moline, 42, Walton-street, Chelsea, London, S.W., the honorary secretary of the British committee.

A MEETING of the Medico-Legal Society will be held on Tuesday next, Feb. 10th, at 8 P.M. at 20, Hanover-square, to continue the discussion upon Dr. Littlejohn's paper on Medico-Legal Post-Mortem Examinations and to hear a paper upon the Whitechapel Murders (Jack-the-Ripper). Members of the profession are invited to be present.

Dr. C. Luxmoore Drew has appointed Dr. S. Ingleby Oddie, barrister-at-law of the Middle Temple, to be deputy coroner for the Western Division of London, vice Dr. H. R. Oswald, who was recently selected as coroner for South-east London.

NEW METHODS OF MEDICAL TREATMENT.

A PAPER READ BY PROFESSOR BOUCHARD AT A GENERAL MEETING OF THE MEDICAL CONGRESS HELD IN CAIRO FROM DEC. 19TH TO 23RD, 1902.

(*Translated and abstracted specially for* THE LANCET.)

OFTEN a patient when he has recovered attributes his cure to the medical man; it is rare for a medical man, if he is well educated, to consider himself the cause of the cure. It is, however, quite exceptional that he has not been useful; he has relieved, he has helped on the acts which lead naturally to cure, he has avoided possible dangers, he has kept up the strength of the patient, and has given him the necessary time in which to get well. He is not directly responsible for the processes which heal, for these processes come about gradually during the succeeding phases of the illness. *Natura medicatrix.*

Spontaneous cure is the rule, at least in acute diseases. It is not the same thing in chronic diseases, which are chronic precisely because they have no natural tendency towards cure. It is just in these cases that medical assistance is necessary and that the art is shown in its dignity and power. Empiricism has given us opium, which does not often cure but which relieves almost always, and the empiricism of olden days has given us nearly all our drugs, among which are several which cure, such as quinine, mercury, the iodides, arsenic, colchicum, and salicin—all drugs the use of which we have learnt by happy accident. Each of these drugs cures a special disease, and almost exclusively that disease, its action being specific. Our forefathers did not know or even suspect the reason, but most of us to-day know the secret of their action. They influence the poison by means of constitutional treatment.

We now know something about the causes of malaria and actinomycosis, but that of rheumatism is still under discussion, and we have neither seen nor cultivated the micro-organism of syphilis. Our ancestors discovered remedies without knowing the cause of their action, but in modern days we have not discovered new specifics, though I must not forget the serums which are the new and brilliant victory of the nineteenth century.

I have often thought that in both local diseases and general diseases which are localised if a general drug treatment exercises a specific cure one might confine the administration of the remedy exclusively to the diseased tissue and attempt the cure by injecting into the affected part the drug which is of known utility when it is distributed all over the body. In a case of acute articular rheumatism a man weighing 135 pounds, who takes every day by the mouth 90 grains of salicylate of sodium, sees all his joint affections disappear. Every day a grain of the drug has entered into every pound and a half of his body, and of course a very small proportion of this has found its way to the soft parts surrounding the affected joints. As a matter of fact, an acute articular rheumatism disappears after the injection *in situ* of extremely small quantities of salicylate of soda. I will not say that I have cured a case with one-sixth of a grain, but I have seen rheumatic joints rapidly cured by half a grain, and it is exceptional if a synovitis is not cleared up by from two to three grains dissolved in a drachm of water.

In no case of acute rheumatism can the local treatment, however satisfactory it appears to be, be considered sufficient. It is true that it reduces the temperature when only one joint is affected but it does not prevent the development of affections of other joints or the invasion of serous membranes. In such cases general treatment is absolutely necessary and if it proves insufficient local treatment can be used as an aid. Of course, it must be understood that I am now speaking of true rheumatism and not of infectious rheumatic conditions such as gonorrhœal rheumatism, which, however, can have its pain relieved by local salicylic treatment.

Several times an injection into the painful thoracic muscles has stopped an early pleurisy and in rheumatic pericarditis I have seen an injection of one and a half grains lower the fever from 102° to 100° F.; then a second injection was made and in three days friction had disappeared. In

endocarditis I have failed and cannot pretend to attain the success of Moritz Benedikt, who with a solution of carbolic acid (2 per cent.) has seen cardiac affections disappear without leaving any trace behind. I have, however, cured cases of painful muscular contraction of the adductors of the thigh and I have seen good results in neuritis such as sciatica. In these cases I injected in the neighbourhood of the diseased tissues, not in the tendons or nerves. In the same way, when it is a question of inflammation of the serous linings of joints or of internal organs, I have not introduced the drug into the affected cavities, but into the neighbouring tissues as near as possible to them.

The success which I have mentioned made me wonder if it would be possible to apply local salicylate treatment to other painful nervous affections. I tried it in tabes dorsalis but obtained no result, and Professor Déjerine also met with no success. I then tried injections of iodide of potassium (3 per cent.) and these injections have permanently eased the pain in some cases of ataxy. I did not inject more than 30 minims each time, being about one grain of the iodide. I then resolved to join biniodide of mercury to the iodide of potassium and thus triumphed over many acute obstinate pains.

These early experiments encouraged me to try the local treatment of syphilis by the same small doses of specific drugs. I have not had either the time or the opportunity to collect numerous cases as I have been able to do for rheumatism, so I will simply state what I have seen. A man with an ulcerating gumma on the back had been treated by mercury and iodide and the two combined. He had also had inunctions and subcutaneous injections of mercury far from the gumma. As all this general treatment seemed to be unavailing I stopped it and injected near the gumma iodide of potassium. After one grain of iodide had been injected the gumma healed. In another case, after unsuccessful general treatment and its being relinquished, the gumma disappeared under the influence of three injections each of one grain of iodide of potassium. A woman suffering from severe syphilis had on several parts of her body deeply ulcerating condylomata. I gave her mercury and iodide in the ordinary way, but at the end of a month her stomach could no longer take the iodide; the injections of benzoate, and later of cyanide, of mercury produced lumps of the size of a nut and her general condition was no better. I therefore stopped the former treatment and experimented on some of the tumours by injecting into them iodide of potassium and biniodide of mercury. In three days a condyloma into the base of which I had made two injections was cured. Another ulceration was healed after six injections. During this time the other condylomata were not treated at all and showed no improvement. The patient's weakness increased and her hair again began to fall out.

With or without general treatment I venture to hope that local treatment will some day triumph over those painful or dangerous local manifestations which we sometimes see developing on the face, in the tongue, or on the eye. One may even hope that some day deep lesions will be treated by this method. It is not, of course, quite certain how these infinitesimal local doses produce their action. Local treatment, because it is local, brings the drug into the affected spot and makes it antiseptic without a general toxic diffusion in the whole body. Ophthalmic surgeons, whom we ought to have imitated long ago, bring the drug, whether it is specific or not, as near as possible to the affected part. Again, local treatment of a nasal coryza often prevents a general infection of the respiratory passages, and local antisepsis of the digestive canal is used to prevent gastric fermentation and intestinal putrefaction.

It is silly and dangerous to try to cast the horoscope of this twentieth century. I am certain that our successors will open new paths which we do not suspect, but I can at least say in what direction treatment is tending to-day. Without neglecting general treatment local means are being more and more employed, sometimes by setting up an antiseptic action, sometimes by awakening antitoxic processes, by which methods the treatment becomes a cure.

Modern treatment, above all, is inspired by the ideas of infection, which are the glory of the nineteenth century and which usher in the twentieth full of the teaching and the memory of those two benefactors of all ages, Pasteur and Lister.

RECENT RESEARCHES IN MALARIA.

A VALUABLE contribution to our knowledge of several questions connected with malaria has recently been published in Calcutta.[1] It forms No. 2 of the new series of Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India and is from the pen of Captain S. P. James, I.M.S., on special duty with the Royal Society's Commission on Malaria. In some of the work here recorded he was associated with Dr. J. W. W. Stephens and Dr. S. R. Christophers. The volume consists of 106 large pages, contains many illustrations, and is divided into seven chapters headed respectively Methods of Investigation, Observations on Anopheles Mosquitoes and their Larvæ, Malarial Infection of Native Children, Prevalence of Malaria in Different Parts of India, Enlarged Spleens and Malarial Infection, Malarial Parasites and Fevers of India, and Observations on Birds.

In his classification of Indian anopheles Captain James recognises 16 species, among which anopheles fluviatilis and anopheles culicifacies are the most common conveyers of malaria; of anopheles Rossii he says that it is almost certainly the commonest species in India and that the three species of the human malaria parasite can be made experimentally to develop in it, but he has never yet found it infected in nature. Of the remaining species most are either of rare occurrence or are very seldom found in human habitations or have not been found to be infected with malaria in the natural state. It has been suggested that the naturally uninfected anopheles may bite only cattle and horses. It has been discovered that the embryoes of filaria sanguinis hominis can develop in anopheles nigerrimus and anopheles Rossii. In consequence of the difficulty which is usually found in the identification of the different species of Indian anopheles Captain James recommends a classification in three primary subdivisions determined by the palp markings—namely (1) palpi unbanded; (2) palpi with four white bands; and (3) palpi with three white bands. Dr. Christophers has made the important observation that anopheletes not only select their breeding places but that each species has a particular kind of breeding ground that it prefers to any other. There is evidence to show that the mosquitoes which infest human habitations will readily fly to a breeding place a quarter of a mile away, but that they will hardly ever fly over three-quarters of a mile.

It was discovered by Professor Robert Koch and independently by Dr. Stephens and Dr. Christophers that a large percentage of native children in Africa constantly have malaria parasites in their blood although at the time they may present none of the more evident clinical symptoms of malarial fever. Captain James has confirmed and extended these observations for certain parts of India, in some of which there is an infection of from 60 to 75 per cent. of the children under ten years of age with no infection of adults. This percentage of infected children, he says, affords a very true test of the endemicity of malaria and the figure representing it may be termed the "malarial endemicity index" or, shortly, the "endemic index." These children are the chief source from which anopheles mosquitoes become infected. As in Africa so in certain highly malarious districts of India, there is a diminished infection of the children with advancing age and the adults are relatively immune, but in less malarious districts in India the immunity of the adult native is not so marked and the diminished infection of the children at advancing age-periods is not shown. It has been said that these infected children present no clinical symptoms of malaria. Captain James remarks that this is no doubt true in the early part of the day, but in the evening many of them have to lie down, their temperatures rise, and careful examination shows that their general health is seriously affected. One of the children in whom quartan parasites were found was only nine months old. Some parts of India, such as Calcutta and the plains of Bengal, are almost free from malaria, while others suffer greatly. In Calcutta anopheles is abundant, numerous breeding grounds are close at hand,

[1] Malaria in India. By Captain S. P. James, I.M.S. Issued under the authority of the Government of India. Calcutta, 1902, pp. 106, price 2s. 3d. Obtainable from seven bookselling firms in London, from Williams and Norgate, Oxford, and from Deighton Bell and Co., Cambridge.

and apparently every condition is favourable to the development of malaria, and yet of 182 children examined by the Commissioners of the Royal Society of London none had either parasites in their blood or enlargement of the spleen. Practically the only species of anopheles which was present in the localities where these children lived was anopheles Rossii. The mere fact that it could exist in large numbers without producing any infection in the children was in itself suggestive that the species was not a good carrier of malaria. Excluding some peculiar instances of which Calcutta is one, it may be said that there is a direct relation between the extent and nearness of breeding grounds, the abundance of anopheletes, and the amount of malaria. While in Calcutta there were abundance of anopheletes Rossii and no malaria, on the other hand, in the Duars (a line of sub-Himalayan valleys in north-east Bengal) there were a relatively small number of anopheletes fluviatilis (of which, however, 6·25 per cent. were found to be infected with sporozoites, and a large amount of malaria. In many parts of India the seasonal variation in the amount of malaria is very marked, especially in the north, where the climatic conditions undergo great changes. Thus at Mian Mir in the Punjab the malaria-carrying species of anopheles (anopheles culicifacies) is rare until the beginning of June; from July until the end of October the anopheletes increase very rapidly; during November they gradually decrease; and by the middle of December they have completely disappeared, not to be seen again until May. Correspondingly, the "endemic index" in the Mian Mir syce lines was 56 per cent. in October and 15 per cent. in December.

Captain James disapproves of the routine treatment of "fever" by the immediate administration of quinine. He believes that if the case is really one of malaria to withhold quinine for a few days (in the absence of parasites from the peripheral circulation) will not endanger the patient in any way and if the case is not one of malaria the administration of quinine in doses suitable for a case of that disease is certainly harmful. In conclusion, Captain James says that complete protection from malaria may be insured by any individual who is willing to take the trouble to pay scrupulous attention to the use of a good mosquito-curtain at night and to protect himself from being bitten during the evening hours. If these precautions are taken it is quite unnecessary to use quinine as a prophylactic. He had visited the most malarious parts of India without having a day's fever merely by using the mosquito-net and wearing high boots or putties in the evening. By means of the same precautions, also, and without taking any quinine, Dr. Stephens had previously passed two years in the most malarious parts of Africa without a single attack of malaria.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

AN ordinary Comitia was held on Jan. 29th, Sir WILLIAM SELBY CHURCH, Bart., K.C.B., the President, being in the chair.

The following gentlemen having passed the required examination were elected Members of the College: Arthur Herbert Hayes, L.R.C.P. Lond.; Goldwin William Howland, B.A., M.B. Toronto, L.R.C.P. Lond.; Frederick William Price, M.B. Edin.; Henry Edmund Symes-Thompson, M.A. Cantab., L.R.C.P. Lond.; George Lestock Thornton, M.A. Cantab., L.R.C.P. Lond.; John Abernethy Willett, M.B. Oxon., L.R.C.P. Lond.; and Herbert Williamson, M.A., M.B. Cantab., L.R.C.P. Lond.

Licences were granted to 94 gentlemen who had passed the necessary examinations.

Diplomas in Public Health were granted jointly with the Royal College of Surgeons of England to the following gentlemen: Bertram Leeds Thomas Barnett, M.B., B.C. Cantab., L.R.C.P. Lond., M.R.C.S. Eng.; Herbert James Barratt, L.R.C.P. Lond., M.R.C.S. Eng.; John Bell, L.R.C.P. Lond., M.R.C.S. Eng.; James Bennett, L.R.C.P. Lond., M.R.C.S. Eng.; Edward Collins Bousfield, L.R.C.P. Lond., M.R.C.S. Eng.; Edwin Harold Brown, M.D. Brux., M.R.C.P. Lond., L.R.C.S. Edin.; Richard Foster Clark, L.R.C.P. Lond., M.R.C.S. Eng.; Alexander Gordon Davidson, M.D., C.M. Edin.; Arthur Briggs Dunne, M.B., B.C. Cantab., L.R.C.P. Lond., M.R.C.S. Eng., L.S.A.; Ernest Gardiner Hill, L.R.C.P. Lond., M.R.C.S. Eng.; Gwilym Prosser Wozencroft James, L.R.C.P. Lond., M.R.C.S. Eng.; William Charrott Lodwidge, L.R.C.P. Lond., M.R.C.S. Eng.; Thomas Stratford Logan, L.R.C.P. & S. Edin., F.F.P.S. Glasg.; Leslie Milburn, L.R.C.P. Lond., M.R.C.S. Eng.; David James Morgan, M.B., B.C. Cantab., L.S.A.; William Murray, M.B., Ch.B. Edin.; John Moir Petrie, M.B., Ch.B. Aberd.; and William John Shannon, M.B., B.Ch. R.U.I.

The PRESIDENT announced that he had nominated Dr. E. F. Trevelyan (Leeds) as Bradshaw Lecturer for 1903 and that the Council had nominated Dr. William Williams (Cardiff) as Milroy Lecturer for 1904.

The PRESIDENT also announced that the Gilbert Blaine medals had been awarded to the following officers: Christopher Louis White Bunton, Surgeon R.N., H.M.S. *Forte*, and John Falconer Hall, Staff Surgeon R.N., Naval Brigade, North China.

The following communications were received:—1. From the Clerk to the Privy Council, announcing the opening of the International Medical Congress at Madrid on April 23rd next. 2. From the Controller of His Majesty's Stationery Office, stating the terms of an agreement with the College to print and to issue a new edition of the "Nomenclature of Diseases." 3. From the Board of Trade Marine Department, in reply to the College, stating that a translation was being prepared of the report of the Norwegian Commission on Beri-beri.

The following Fellows were elected Councillors:—Dr. D. B. Lees, Dr. J. A. Ormerod, Sir Isambard Owen, Dr. Percy Kidd, and Dr. T. Stevenson. Dr. Theodore Williams was reappointed a representative of the College on the Court of Governors of the University of Birmingham.

The following motion was proposed by the Second Censor (Dr. G. VIVIAN POORE) and seconded by Dr. J. K. FOWLER:—

That the President be requested to nominate a small committee to consider and report to the College as to whether or not any change be desirable in the date and arrangements for the annual Harveian festival.

The motion was carried and the PRESIDENT nominated the following Fellows as members of the committee: The Treasurer (Sir Dyce Duckworth), Dr. Poore, Dr. Fowler, Dr. T. T. Whipham, Dr. F. W. Pavy, and the President.

A report was received from the representative of the College (Dr. Norman Moore) in the General Medical Council on the proceedings of the Council affecting the College at the November session.

The quarterly report of the College Finance Committee was received and adopted.

A report was received from the committee of management, dated Dec. 29th, 1902. The following recommendations were embodied in the report:—

1. That the Rotunda Hospital, Dublin, be recognised as a place of instruction in midwifery and gynæcology, for the certificates required by Clauses 5 (*h*), 6 (*d*), and 11, par. ii., Section I., of the Regulations of the Examining Board in England.
2. That the University of Minnesota, United States, be added to the list of universities at which the curriculum of professional study required for the diplomas of the Royal Colleges may be pursued and whose graduates may be admitted to the Final Examination of the Examining Board in England on production of the required certificates of study.

The report was adopted.

After some further business the PRESIDENT dissolved the Comitia.

MEDICINE AND THE LAW.

The Peasenhall Case.

THE man Gardiner, twice tried without result for the murder of Rose Harsent at Peasenhall on June 1st, 1902, has been set at liberty, and no one has ventured to express disapproval of the decision of the Attorney-General authorising the entry of a *nolle prosequi* against him. The two abortive trials which have taken place, each resulting in the disagreement of the jury, have called attention to an undesirable state of affairs which at times arises owing to the law requiring a unanimous verdict in order that a prisoner may be convicted. This, however, is not the only cause which has awakened the sympathy with Gardiner that has been expressed since his second trial. There appears to be no doubt that a very considerable majority of the jury who first tried him were in favour of a conviction, so that he at least cannot complain of the fact that in England the verdict of

a majority, however large, is not sufficient. It was, however, realised by the public after the second jury had disagreed that the crime for which he was indicted, admittedly a brutal murder committed by somebody, had taken place in June, 1902, that Gardiner had been tried for the first time in November and again in January, 1903, and that if he was to be once more sent before a Suffolk jury he would have to lie in prison for more than a year before the ultimate decision of his fate. Writing of this case in THE LANCET after the first trial[1] we commented upon the obvious hardship involved in the long interval that would elapse before the second hearing if it was to take place at the county assizes as then arranged. The necessity for this we questioned, and in the light of what has since occurred the hardship appears to be even greater, although, no doubt, any other course than that actually pursued would have been an innovation. It is clearly not right that the State should, where it is avoidable, increase the punishment of a criminal or inflict an undeserved penalty upon an innocent person by adding prolonged mental torture to the anxiety and distress inseparable from an accusation of serious crime. The acuteness of the mental distress caused to the prisoner by a trial that lasts for several days, and by the expectation of it while he lies in gaol, cannot be precisely gauged. It must vary in degree according to the temperament of the person subjected to it and other circumstances; but whatever the temperament may be, all will consider that the lengthening of the period of suspense must increase the strain upon the mind undergoing it and that where the life of the prisoner is at issue the strain must in all cases be very great. In some cases it may reach, or almost reach, the point of depriving the prisoner of reason altogether. It should also be remembered, apart from the question of inflicting unnecessary pain, mental or otherwise, that accused persons, whether they can pay for advocacy or not, have to depend largely upon themselves for the guidance of their defence and that a man, however broken down by anxiety and waiting he may be, may nowadays practically have no choice but to face in the witness-box a jury eager to judge of his guilt or innocence by his appearance and demeanour, as well as by the readiness and clearness of his replies to examination and cross-examination.

This last innovation in the criminal procedure of the country made by the admission of the accused, or the husband or wife of the accused, to give evidence is perhaps more calculated than any that preceded it to introduce a doubt into the minds of one or two jurymen which will not affect the judgment of their fellows, so that what has happened in the case of Gardiner may at any time occur again, while the interval between his two trials is the usual interval that occurs between country assizes. In London, however, the Central Criminal Court sits practically every month and there is special provision made by statute for the removal to it of cases otherwise out of its jurisdiction where it appears expedient to the ends of justice that they should be so removed. The removal of a trial involving the evidence of a number of witnesses to London and the imposing of it upon a London jury is not a light matter, but it is not unheard of, and few would complain in those exceptional cases in which the object was to relieve a fellow-creature from needless suffering. The recent case of Mrs. Penruddocke, transferred to the Central Criminal Court on account of the alleged feeling against the accused in Wiltshire, affords an instance of a trial transferred in unusual circumstances of a different kind from those which surrounded the Peasenhall case, but we have not heard that witnesses or jury expressed any dissatisfaction at the course taken. At the same time we are not aware that delay alone has ever been made the cause of such removal, although many judges and others have called attention to the long time during which prisoners are often kept awaiting their trial. Whatever course, however, might have been taken with regard to Gardiner his case has shown that in this country delay may occur before the acquittal or condemnation of an accused person which English laymen, at all events, have usually only associated with foreign courts of justice. It has also shown that public opinion and public sympathy are strongly opposed to such delay, apart from any views that may be held with regard to the prisoner's guilt or innocence.

[1] THE LANCET, Nov. 29th, 1902, pp. 1474, 1475.

Flannelette and Fire.

Two inquests held on the same day recently by Mr. Troutbeck showed that both the deaths under consideration were due to the wearing of flannelette underclothing which had caught fire. In the one case an adult, a woman, aged 60 years, was the sufferer. She died in St. George's Hospital. In the other the victim was a small boy, aged three years and nine months, who was wearing flannelette and in the absence of his mother set himself on fire by playing with matches. He died in King's College Hospital. THE LANCET has often called attention to the inflammability of flannelette and so have the lay newspapers, chiefly in reporting deaths due to it; but whether such warnings as these reach the ears of the persons who most need them may be doubted. It might do some good if the sellers of flannelette, or of garments made of it, were compelled to deliver with each portion or article sold a printed warning as to its dangerous peculiarity.

The Drink Question.

Mr. J. T. Bottle, a justice of the peace at Great Yarmouth, has contributed an interesting letter to the *Times* upon the drink question. Mr. Bottle does not share the views of the Home Secretary as to the impossibility of judges and magistrates keeping records for the guidance of those interested in the public health as to the number of convictions taking place before them in which the offence is traceable to drink. Mr. Bottle has himself kept a record of such convictions where he himself has sat as a magistrate, and he considers that in the last 12 years 60 per cent. of these have been due, directly or indirectly, to drink. In his letter Mr. Bottle calls attention to the power that drink-sellers have to diminish the evils of drunkenness by exercising care in carrying on their trade, and he illustrates this from recent experience at Great Yarmouth, a town of which he says, "The number of licensed houses is 306, with a population of 51,000, or 1 to 167, whilst the proportion of on-licences is 1 to 189, a more ominous record probably than that of any other considerable town in England."

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH.

A QUARTERLY meeting of the Royal College of Physicians of Edinburgh was held on Feb. 3rd, Sir THOMAS R. FRASER, Vice-President, being in the chair.

David James Galloway, M.D., M.R.C.P. Edin., Singapore, was admitted by ballot to the Fellowship of the College.

The REGISTRAR reported that since the last quarterly meeting 37 persons had obtained the Licence of the College by examination.

The Parkin prize, which is in the gift of the College, was awarded after competition to Charles James Lewis, M.D., F.R.C.P. Edin. The subject of the essay on the present occasion was, in terms of the deed of bequest: "On the Curative Effects of Carbonic Acid Gas or other Forms of Carbon in Cholera, for Different Forms of Fever and other Diseases."

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8880 births and 5229 deaths were registered during the week ending Jan. 31st. The annual rate of mortality in these towns, which had been 18·5, 17·5, and 20·1 per 1000 in the three preceding weeks, declined again last week to 18·1 per 1000. In London the death-rate was 17·7 per 1000, while it averaged 18·2 in the 75 other large towns. The lowest death-rates in these towns were 7·6 in West Ham, 8·2 in Handsworth, 9·2 in Devonport, 10·1 in Burton-on-Trent, 10·8 in Wolverhampton, 11·5 in Barrow-in-Furness, 11·6 in Wallasey, and 12·0 in Swansea; the highest rates were 23·1 in Hanley, 23·3 in South Shields, 23·5 in West Bromwich, 23·7 in Norwich, 24·0 in Oldham, 24·6 in Rotherham, 25·1 in Newcastle-on-Tyne, and 26·0 in Wigan. The 5229 deaths in these towns last week included 493 which were referred to the principal infectious diseases, against 504, 450, and 539 in the three preceding weeks; of these 493 deaths 163 resulted from whooping-cough, 105 from measles, 71 from diphtheria, 60 from diarrhœa, 47 from scarlet fever, 34 from "fever" (principally

enteric), and 13 from small-pox. No death from any of these diseases was registered last week in Ipswich, Wolverhampton, Handsworth, Wallasey, Bootle, York, or Stockton-on-Tees; while the highest death-rates from these principal infectious diseases were recorded in Croydon, Hanley, Walsall, West Bromwich, King's Norton, Manchester, Oldham, and Newport (Mon.). The greatest proportional mortality from measles occurred in Manchester, Hull, Middlesbrough, South Shields, and Newport (Mon.); from diphtheria in Reading, Hanley, Coventry, and Middlesbrough; and from whooping-cough in Croydon, Tottenham, Northampton, Bristol, Hanley, King's Norton, Smethwick, Stockport, and Oldham. The mortality from scarlet fever, from "fever," and from diarrhœa showed no marked excess in any of the large towns. Of the 13 fatal cases of small-pox registered in these towns last week six belonged to Liverpool, three to Leicester, and one each to Walsall, Birmingham, Bury, and Manchester. There were seven cases of small-pox under treatment in the Metropolitan Asylums hospitals on Saturday, Jan. 31st, against numbers declining from 21 to four on the six preceding Saturdays; six new cases were admitted during last week, against four, two, and 0 in the three preceding weeks. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had been 2219, 2125, and 2074 at the end of the three preceding weeks, had further declined to 2019 at the end of last week; 227 new cases were admitted during the week, against 223, 192, and 227 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 354, 310, and 411 in the three preceding weeks, declined again last week to 355, but were 59 below the corrected average number. Influenza was returned as the primary cause of 25 deaths in London last week, against 39, 34, and 43 in the three preceding weeks. The causes of 59, or 1·1 per cent., of the deaths in the 76 large towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bristol, Leicester, Salford, Leeds, Newcastle-on-Tyne, and 42 other smaller towns; the largest proportions of uncertified deaths were registered in Birmingham, St. Helens, Warrington, Sheffield, Hull, and South Shields.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had risen from 18·5 to 24·6 per 1000 in the eight preceding weeks, declined again to 21·3 per 1000 during the week ending Jan. 31st, but was 3·2 per 1000 in excess of the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 12·4 in Perth and 17·8 in Edinburgh to 23·0 in Aberdeen and 24·8 in Greenock. The 696 deaths in these towns included 32 which were referred to whooping-cough, 20 to measles, 13 to diarrhœa, seven to diphtheria, five to "fever," and four to scarlet fever, but not one to small-pox. In all 81 deaths resulted from these principal infectious diseases last week, against 78, 76, and 102 in the three preceding weeks. These 81 deaths were equal to an annual rate of 2·5 per 1000, which was 0·8 per 1000 above the mean rate last week from the same diseases in the 76 large English towns. The fatal cases of whooping-cough, which had been 24, 32, and 52 in the three preceding weeks, declined again last week to 32, of which 27 occurred in Glasgow and four in Edinburgh. The deaths from measles, which had been 15, 12, and 11 in the three preceding weeks, rose again to 20 last week, and included 14 in Aberdeen, two in Glasgow, two in Edinburgh, and two in Leith. The fatal cases of diarrhœa, which had been 18 and 21 in the two preceding weeks, declined last week to 13, of which six were registered in Glasgow, three in Aberdeen, and two in Dundee. The deaths from diphtheria, which had declined from 13 to five in the four preceding weeks, rose again to seven last week, and included four in Glasgow. The fatal cases of "fever," which had been three and eight in the two preceding weeks, declined again last week to five, of which three occurred in Glasgow, where two of the four deaths from scarlet fever also were registered. The deaths referred to diseases of the respiratory organs in these towns, which had been 152, 174, and 183 in the three preceding weeks, declined again last week to 173, were but 32 in excess of the number in the corresponding period of last year. The causes of 30, or more than 4 per cent., of the deaths registered in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 26·8, 30·0, and 28·1 per 1000 in the three preceding weeks, further declined to 24·8 per 1000 during the week ending Jan. 31st. During the past four weeks the death-rate has averaged 27·4 per 1000, the rates during the same period being 18·7 in London and 19·1 in Edinburgh. The 180 deaths of persons belonging to Dublin registered during the week under notice showed a decline of 24 from the number in the preceding week, and included 10 which were referred to the principal infectious diseases, against 14, 16, and 10 in the three preceding weeks; of these six resulted from diarrhœa, three from scarlet fever, and one from diphtheria, but not one from small-pox, measles, whooping-cough, or "fever." These 10 deaths were equal to an annual rate of 1·4 per 1000, the death-rates last week from the principal infectious diseases being 1·7 in London and 1·4 in Edinburgh. The six fatal cases of diarrhœa showed an excess of five over the number in the preceding week; the deaths from scarlet fever, which had been one and two in the two preceding weeks, further rose last week to three; while the fatal cases of diphtheria, which had been four and three in the two preceding weeks, further declined to one last week. The 180 deaths in Dublin last week included 27 of children under one year of age and 50 of persons aged 60 years and upwards; these numbers were respectively four and 13 below those recorded in the preceding week. Five inquest cases and three deaths from violence were registered; and 65, or more than a third, of the deaths occurred in public institutions. The causes of 12, or nearly 7 per cent., of the deaths registered in Dublin last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet Surgeons: E. H. Saunders to Deptford Victualling Yard, and F. J. Lilly to the *Viriđ*, for Keyham Naval Barracks. Dated Feb. 2nd, 1903.

ROYAL ARMY MEDICAL CORPS.

Captain A. W. Hooper, D.S.O., joins at Aldershot and is posted to the Cambridge Hospital for duty. Captain J. R. McMunn joins at Aldershot and is posted to the 3rd Station Hospital for duty. Captain P. Evans (attached Medical Officer with the Grenadier Guards) proceeds to Aldershot for duty.

The undermentioned gentlemen to be Lieutenants on probation (dated Jan. 31st, 1903):—John Grenville Bell, Maurice Guy Winder, Frederick Walter Witney Dawson, John Martin Maynard Crawford, Robert Maurice Ranking, Thomas Seymour Coates, Albert Edward Bathurst Wood, Roland Harley Bridges, Joseph Gatt, James Charles Gordon Carmichael, Francis C. Lambert, James Bernard Meldon, Reginald Cameron Wilmot, Charles Walter Holden, James Ainsworth William Webster, Charles Bramhall, Thomas Ernest Harty, Henry Hubert Swanzy, Kenelym Cobhoun Edwards, John Hay Duguid, Harry Beatty Kelly, George Herbert James Brown, Edward Mansergh Pennefather, Benjamin Howard Vella Dunbar, John Evan Skey, Henry Thompson Stack, Donald Gordon Carmichael, David Ahern, Burnet Graham Patch, and Geoffrey Wallace Grainger Hughes.

The undermentioned Lieutenants on probation are seconded under the provisions of Article 349 of the Royal Warrant March 24th, 1902 (dated Jan. 31st, 1903):—Frederick Walter Whitney Dawson, Geoffrey Wallace Grainger Hughes, and Francis C. Lambert.

IMPERIAL YEOMANRY.

The City of London (Rough Riders): George Fernandez Mitchell Clarke to be Surgeon-Lieutenant. Dated Jan. 20th, 1903.

VOLUNTEER CORPS.

Royal Garrison Artillery (Volunteers): 1st Lanarkshire: Surgeon-Lieutenant T. Kay to be Surgeon-Captain. Dated Feb 4th, 1903. *Rifle:* 1st Lanarkshire: Surgeon-Captain F. V. Adams to be Surgeon-Major. Dated Feb. 4th, 1903. 4th (Nottinghamshire) Volunteer Battalion the Sherwood Foresters (Nottinghamshire and Derbyshire Regiment): Frederick William Johnson to be Surgeon-Lieutenant. Dated Feb. 4th, 1903.

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

The London Campanies: Lieutenant A. Granville to be Captain. Dated Sept. 20th, 1902.

MEDICAL STAFF COLLEGE.

The Secretary of State for War has approved of the appointment of the following physicians or surgeons as clinical teachers to the Medical Staff College:—

Medicine: Dr. S. J. Sharkey (St. Thomas's Hospital) and Dr. W. Hale White (Guy's Hospital).

Surgery: Mr. A. Pearce Gould (Middlesex Hospital) and Mr. Stanley Boyd (Charing Cross Hospital).

Dental Surgery: Mr. J. H. Badcock (Guy's Hospital).

Dermatology: Dr. T. Colcott Fox (Westminster Hospital).

Laryngology: Mr. F. J. Steward (Guy's Hospital).

Midwifery and Gynæcology: Dr. W. R. Dakin (St. George's Hospital).

Ophthalmology: Mr. E. Treacher Collins (Royal London Ophthalmic Hospital).

Otology: Mr. A. H. Cheatle (King's College Hospital).

Pædiatrics: Dr. A. E. Garrod (Hospital for Sick Children, Great Ormond-street).

Psychological Medicine: Dr. M. Craig (Bethlem Royal Hospital).

Major W. B. Leishman, R.A.M.C., has been appointed Professor of Pathology, vice Dr. A. E. Wright, who has resigned the appointment. Dated Feb. 1st, 1903.

ROYAL VICTORIA HOSPITAL, NETLEY.

The *Army and Navy Gazette* of Jan. 31st says: "At a recent inspection of the Royal Victoria Hospital, Netley, it was found that the annexes were in a very unsatisfactory condition as to sanitation. Owing to their size and shape it has been found impossible to arrange them internally according to the most recently approved designs and requirements without pulling down and rebuilding. The cost of doing this is considered to be prohibitive, owing to the large amount which would have to be spent and the great inconvenience which would be incurred. It has therefore been decided to commence on an early date a complete system of changes so as to render the building better fitted for the purposes for which it is used, and votes will be taken in next year's estimate to enable the necessary works to be proceeded with."

THE TRAINING OF SICK-BERTH STEWARDS.

The Royal Naval Hospital, Stonehouse, is in future to be recognised as a depôt for probationers to be trained as sick-berth stewards, owing to the authorities at Haslar being unable to train all the probationers who present themselves there. The permanent complement of probationers at the Royal Naval Hospital will be 25, and 19 have already entered. Their training is to be supervised by an additional surgeon (Surgeon G. Ley, R.N.) who will be assisted by an additional ward officer. The culinary instruction will be under the direction of the lady cook at Haslar Hospital who will pay periodical visits of inspection. In addition the men are to undergo a daily course of physical drill and gymnastics. The period of instruction will extend to four months, at the end of which time qualified probationers will receive their appointments to different hospitals and ships.

LITERARY INTELLIGENCE.—The following new books will shortly be issued by Messrs. J. and A. Churchill:—The seventh edition of Sir William Moore's "Manual of Family Medicine and Hygiene for India," published under the authority of the Government of India. The new edition has been thoroughly revised by Major J. H. Tull Walsh, I.M.S. Vol. I. of "A System of Clinical Medicine for Practitioners and Students," giving an account of the diagnosis, prognosis, and treatment of disease, by Dr. T. D. Savill. The second edition of Corbin and Stewart's "Handbook of Physics and Chemistry," adapted to the requirements of the first examination of the Conjoint Board. A new work on the Microscopical Examination of Foods and Drugs, by H. G. Greenish, Professor of Pharmaceutics to the Pharmaceutical Society. Vol. IV. (Electric Lighting and Photometry) of Groves and Thorp's Chemical Technology. The writers of this volume are Mr. A. G. Cooke and Mr. W. J. Dibdin.

Correspondence.

"Audi alteram partem."

THE RISE OF BLOOD PRESSURE IN LATER LIFE.

To the Editors of THE LANCET.

SIRS,—The interesting letters of Sir R. Douglas Powell and Professor T. Clifford Allbutt in THE LANCET of Jan. 24th (p. 265) and 31st (p. 329) respectively, on the rise of blood pressure late in life tempt me to endeavour to supplement the imperfect remarks which I made when the paper on this subject was read.

In my judgment Professor Allbutt's use of the term increased viscosity of the blood, unless it is intended to be merely figurative, is misleading and it might send young investigators upon a vain research. That there is increased resistance to the onward movement of the blood is certain and I have long held that this resistance has its primary seat in the capillaries, which would practically be implied if viscosity were the cause, but the cause need not be viscosity in a physical sense. Attraction between the wall of a capillary tube and contained fluid has an important influence on the flow of the fluid along it. Water rises against gravity in a capillary glass tube, and apparently still more readily along the stalks of flowers in close contact, as is often seen by its dripping over the edge of a vase by no means full. Mercury does not rise in a glass tube to the level of the mercury outside and presents a convex instead of a concave surface at the top of the column. Water, again, would refuse to enter the same tube in which it had previously risen, except under pressure, if the interior of the tube had been greased.

It is obvious that the rate of movement of the blood in the capillaries must be affected by the relation between the blood and the capillary wall. The living capillaries are extremely sensitive to the presence of certain substances, organic or saline, and when these are added in minute amount to fluid passing through them the flow immediately diminishes (the vaso-motor nerves having been divided), as was shown many years ago by Dr. Sidney Ringer. I have long contended with Sir Douglas Powell that products of imperfect metabolism or imperfect elimination, or ordinary products of metabolism, may play the part of Ringer's digitaline or lime-salts in bringing about capillary obstruction. The clinical observation that obstruction in the peripheral circulation, with the consequent increased blood pressure in the arteries, can be modified by eliminants is a matter of every-day experience.

Arteriole contraction under nervous stimulation can no doubt increase the obstruction to the blood current immediately and very greatly, and, whether partial or general, it can so far raise the blood pressure as to give rise to increased secretion of urine, but I cannot accept it as the cause of the persistent high pressure which is the subject of the present discussion.

Professor Allbutt's object in bringing up for consideration the rise of blood pressure late in life is to call attention to the fact that the condition of the vessels, heart, and kidneys found after death in the subjects of this affection is the final result of a long process. The structural changes leading up to this arterio-sclerosis, as it has come to be called, are, in a very large proportion of the cases, undoubtedly initiated by obstruction in the arterioles and capillaries, and were traced years ago by Sir George Johnson. Clinically, the course of the arterial thickening and degeneration can be followed, sometimes from youth, often from early manhood, practically always from middle age if it is to be found at all late in life, by the artery being persistently full between the beats of the pulse so that it can be rolled under the finger, by the gradual change which can be recognised in the walls of the vessels when the blood is pressed out of them, and by their increasing tortuosity. At first small, from defensive contraction of the muscular coats, they gradually yield to the distending influence of the fluid pressure within them and we have ultimately the large, tortuous, inelastic, thick-walled, leathery tube of advanced sclerosis. The process cannot only be recognised, it can be modified and checked at any time before advanced degeneration has taken place by suitable diet and eliminants.

It may be added that high blood pressure and the cardio-vascular changes incident to it are not necessary effects of advancing years. Many persons at the age of 70 or 80 have arteries as soft and elastic as those of a child. Nor are these changes the only ones met with in old age. The artery at the wrist may be thin and compressible when calcareous points, or plates, or rings can be felt in its walls; the blood pressure is not high and never has been. Again, there may be the special changes in large and small arteries due to syphilis, an account of which cannot now be given.

I am, Sirs, yours faithfully,

Brook-street, Feb. 3rd, 1903. W. H. BROADBENT.

To the Editors of THE LANCET.

SIRS,—I venture to send you a line on this subject, partly because it is one to which I have contributed somewhat, but mainly because it is of supreme importance that we should have perfectly clear ideas of circulatory phenomena. Professor T. Clifford Allbutt was good enough to send me a proof copy of the interesting paper which he read recently before the Royal Medical and Chirurgical Society, and were it not for the correspondence which has already appeared in your pages I would not have thought it necessary to crave space for any remarks from me. The correspondence leads me, however, to ask Professor Allbutt if he would kindly make his position more clear to an ordinary mind such as my own. Professor Allbutt is such a master at literary garnishing that I am not quite sure I have succeeded in clearly determining the precise character of the viands he has displayed so attractively. The particular point regarding which I at present seek enlightenment is as to the precise place he gives to the condition of spasm contraction of arteries, for which I have proposed the term "hypertonus."

In a paper which appeared in THE LANCET in 1901[1] I drew attention to the part taken by this "hypertonus" in determining arterio-sclerosis and I so fully realise how important it is that the physician should understand what Professor Allbutt calls "the pathology of processes" that I wish to restate what I indicated then—namely, that certain conditions of blood lead to tightening up and thickening of vessel walls which is often mistaken for true structural alteration; that the recurrence of this "hypertonus" or spasm contraction leads ultimately to structural changes in the vessels; and that along with this "hypertonus" and subsequent structural change there may, or there may not, be raised blood pressure.

The conditions of the blood which lead to this "hypertonus" are, I think, sufficiently indicated by the word *impurity*. This is, if I understand aright, Sir R. Douglas Powell's position. Does Professor Allbutt accept this reaction of vessels? Or does he contend for some physical alteration in the blood which he terms *viscosity* and which, by impeding its flow, leads to heightened pressure, but to no active contractile reaction on the part of the vessel walls? Whatever the experimentalists may say, clinical observation surely puts it beyond doubt that impurity of the blood causes this contraction of vessels which in the vigorous is usually accompanied by heightened pressure. That, however, all tightening up of vessels should be spoken of, or thought of, as heightened pressure or raised *tension* is a fundamental error which we cannot too strenuously seek to correct. In seeking to know "the pathology of processes" it has appeared to me that this vessel response to impure blood was the first step When it is accompanied by decidedly high pressure the thoughtful practitioner recognises it and hence the diet restrictions and the blue pill. Without the heightened pressure the condition is not usually recognised, and yet, if my contention be correct, herein lies the beginning of a process the recognition of which would prevent or delay those static manifestations which Professor Allbutt so picturesquely indicates.

I am, Sirs, yours faithfully,

Edinburgh, Jan. 31st, 1903. WM. RUSSELL.

THE ANATOMY OF GLENARD'S DISEASE.

To the Editors of THE LANCET.

SIRS,—I have to thank you for your kindness in affording me an opportunity of perusing Dr. Arthur Keith's paper on the Anatomy of Glénard's Disease, which you were good enough to forward to me, and your annotation on which called forth the comment contained in my former letter. I must, however, add that my acquaintance with the original document has in no way modified the opinions expressed in my letter regarding the contents of the annotation in question or those contained in that which I afterwards forwarded to you on the subject of the editorial comment which you appended to my published letter. This latter comment, indeed, rather surprised me and—emphatically—calls for some reply, on the two-fold ground that it misrepresents me and misstates some very important facts in physiological anatomy. The critical rejoinder in question consists of three sentences. The first is: "Dr. Knott is criticising a paper which he has not read." I beg leave to state that Dr. Knott was doing nothing of the kind: he was criticising an annotation on a page of THE LANCET which lay open before him. This fact must be very obvious to everyone who has read my letter. The second sentence runs as follows: "His remarks as to the action of the diaphragm are mostly academically correct, but had he read the paper he would have gathered that several of his premisses are probably incorrect, particularly that which assumes the relative immobility of the central tendon." I do not propose to ask my critic to offer a scientific distinction between the conditions of being "*academically*" *correct* and *absolutely correct*, or to explain how a statement can be *academically correct* of which the logical premisses are "*probably incorrect*"; or how far the "theory of *probabilities*" can be utilised to influence opinion regarding the hard facts of physiological anatomy. It is my province to deal with the latter; and the only question in this domain referred to in the sentence which I have just quoted is that of "the relative immobility of the central tendon." The *arguments* of the quotation I take the liberty of relegating to the department of transcendental metaphysics, to which they appropriately belong. With regard to the movements of the cordiform tendon during inspiratory expansion of the chest, I had been already aware that one of the mysteries revealed by the x-ray illumination was the considerable downward displacement of this fibrous shelf during inspiration. I have seen the phenomenon very skilfully and effectively displayed in the course of a brilliant demonstration by an x-ray specialist. But I saw at the same time—what the accomplished physicist in question did not appear to have seen—that the descent in question was rather apparent than real, rather relative than absolute; for the *appearance* was produced almost wholly by the *ascent of the ribs and sternum*, which had, of course, the same effect on the objective field thus offered to the observer in an antero-posterior view of a translucent thorax. To my critic, and to all readers who are specially interested in the study of the action of the diaphragm, I would suggest the following experiment. There will be no danger, I think, of its being brought within the jurisdiction of the existing law against "vivisection" or even of those for the "prevention of cruelty to children." Let him *purchase* the friendly confidence of a lively "street Arab" of eight or nine, undress him, and place him standing on a table so that the denuded epigastric region will be (approximately) on a level with the visual organs of the observer. Let him then induce his youthful friend—under the appetising influence of a further present—to proceed to swallow, with a minimum expenditure of valuable time, three consecutive mouthfuls of dry oatmeal. The result will be a perfect display of the aberrant physiological phenomenon familiarly known as "hiccup." He will then have the best possible opportunity of seeing that with each *unmodified* contraction of the diaphragm the six lower ribs are drawn *upwards* and *inwards*, the degrees of displacement increasing from above downwards. This form of displacement is a mechanical necessity which could be foretold by any physiological anatomist, as the translation of every part of the disturbed chest-wall is towards the adjacent part of the circumference of the cordiform tendon of the diaphragm. It will also be seen how little real expansion of the chest takes place in this action. Indeed, without any such *objective* experiment, everybody's *subjective* recollections of the operation of *hiccuping* will have informed him how little tendency it produces to *inspiration* of the surrounding air—even if the glottis had been left wide open. The fact that the ribs are so extensively displaced in this movement is, I venture to suggest, an unanswerable reply to the misstatement that the cordiform tendon undergoes much downward change of position. *Both ends* of the muscular fibres cannot be *very much displaced* at the same time.

The third, and last, sentence of your criticism reads as

[1] THE LANCET, June 1st, 1901, p 1519.

follows: "As to the assertion that the lower ribs are drawn downwards and backwards by the simultaneous contraction of the diaphragm, intercostals, and serratus posticus inferior, it is sufficient to remark that clinicians who have opportunities of watching the isolated actions of muscles in disease are all agreed that the diaphragm *elevates* the lower ribs." The disingenuousness of the attempted argumentation of this sentence can hardly be surpassed, even in the records of legal, or theological, sophistication. Whose, I wonder, is "the *assertion* that the lower ribs are drawn downwards and backwards by the simultaneous contraction of the diaphragm, intercostals, and serratus posticus inferior"? Most assuredly it is not mine, as every reader of my letter can see. I have made the incontrovertible statement that *such is the action of the serratus posticus inferior, acting singly.* By so acting on the ribs it corrects the influence of the contracting diaphragm which, if left unopposed, would have the effect of *narrowing* "the basal section of the thorax, where most expansion is attainable." (I quote my own words.) It is, of course, superfluous to point out to those who have perused, and understood, my description of the action of the diaphragm that the testimony derived from "clinicians who have opportunities of watching the isolated actions of muscles in disease" was instruction wasted—so far as the present writer is concerned, as well as being conspicuously imperfect.

The contents of Dr. Keith's original paper call for comment under many other heads; but I will select only a few. On the first page, as the author discusses "the causes of the variability" of the level of the diaphragm after death, we are told that "the elasticity of the lungs draws the diaphragm up as far as it will yield. The high or low position of the diaphragm depends very little on the distension of the abdomen or of the bowel." Regarding these statements I must say that in the present state of physical and anatomical knowledge they read rather "funny." It is unnecessary, of course, to point out that the lungs, or their elasticity, have no *direct* connexion with the diaphragm. And every tyro in physiology knows, or surely should know, that the expansion of the lungs during inspiration is due to the atmospheric pressure—the regulation 15 lb. (14·7) to the square inch—on the *mucous* surfaces, when the active contraction of the muscles of inspiration has expanded the chest, by bearing a certain proportion of the same pressure from off the *cutaneous* (external) surface. The external weight lifted (or pushed) off the surface of the body is represented by that used by the internal limb of the gaseous balance in distension of the tubes and vesicles, as the pulmonary pleura follows the movements of the walls of the expanding chest. And when the inspiratory muscles have ceased to act the chest walls follow the contracting elastic tissue of the lung, till equilibrium of balance between the external and internal pressures is again reached. This atmospheric pressure acts with obvious directness on the circumferential chest-wall in squeezing it—in corset fashion—back to its original position; but it appears to be sometimes forgotten that the *atmospheric pressure is* also *the sole efficient agent in pushing up the diaphragm* during ordinary expiration, and more especially still in that which constitutes the last obvious movement of life.

On page 2 the reader is told that he "must look upon the diaphragm as a fan-shaped digastric muscle." This appears to be Dr. Keith's own special discovery. "The central tendon corresponds to the intermediate tendon of such a muscle as the digastric or rectus abdominis." To this physico-metaphysical statement I take leave to take special exception. The preposterous statement that the diaphragm is a digastric muscle cannot for a moment be entertained by any skilled physiological anatomist. It would be less intolerable, indeed, to speak of it as a myrio-gastric muscle, but even such description would be very unsatisfactory. It is rather difficult to comprehend how anyone acquainted with the diaphragm can hold the view that the action of each individual portion is to draw its circumferential attachment towards the spine. Everybody who knows its structure knows that the lateral fibres, on either side, pass from the ribs towards the central tendon and that the only possible effect of their contraction—in addition to reducing the upward convexity—is to draw these yielding bones towards that tendon; that is to say, upwards and inwards. The fibres attached to the *central leaflet*, of course, have necessarily the collective action of drawing the xiphoid cartilage and adjacent cartilages of the lower ribs towards the spine. But this movement may almost be regarded as incidental. The modern geometer "squares the circle" by treating every *infinitely small* segment of the circumference as a straight line. By this—"*quam proxime*" correct—assumption he resolves the space into a series of infinitely narrow *parallel* rectangles. The calculation is then easy. But his rectangles must be parallel. The diaphragm undoubtedly may, for fanciful purposes, be looked upon as a structure composed of an infinite number of infinitely small rectangular digastric muscles. The rectangular bundles are, however, not parallel, and cannot possibly be made so; and, accordingly, the mathematical methods of "summation of series" cannot be made to apply.

I more especially wonder how it is that in this unusually original thesis Dr. Keith has ignored the incontrovertible fact that if the diaphragm acted according to his view—by drawing all its distal attachments towards the spine—it would very seriously limit the space behind the (almost vertical) posterior fibres of the muscle, which is precisely the region where, under existing arrangements, the lungs undergo the greatest proportion of expansion. A glance at Fig. 1 of his own paper will show this. I must also point out the fact that the greater firmness of the chest-wall in this region renders the wearing of corsets more tolerable than could otherwise be the case.

In the discussion of the "action on the ribs" we are told in regard to that on the abdominal ends of the six lower ribs: "this of the three directions in which it expands (? expends) the force of each contraction is the most difficult to understand." And the writer proceeds to ask, "How is it that the ends of those diaphragmatic ribs do not move in towards the origin of the diaphragm from the lumbar region of the spine?" In this connexion I beg leave to state that both difficulties are wholly of Dr. Keith's own creation. If the diaphragm were, as he states, a digastric muscle, the phenomenon would be simply impossible to understand, even after the most careful perusal of his preposterous explanation. But as the diaphragm is *not* a digastric muscle, endowed with only antero-posterior activity, the difficulty only exists in his own imagination.

There are other points in this very original paper of Dr. Keith's which may very easily be made to yield to criticism, but it is probably better to add nothing further to an already too lengthy communication.

I am, Sirs, yours faithfully,

JOHN KNOTT, M.D. Dub.

THE RAPID TREATMENT OF CONGENITAL HIP-MISPLACEMENT.

To the Editors of THE LANCET.

SIRS,—The profession having now had time to cool down from the excitement caused by the demonstrations of Professor Lorenz—a little study and calm reflection will show it that miracles must not be expected. Already a long list of failures and very serious accidents have been recorded, and as the public, which is ignorant of such matters, will be clamouring for marvellous cures it is necessary that practitioners should be on their guard when advising, and though an effort has been made by medical and other papers to caution the public that complete cures are not to be expected and that the plan is not free from considerable risk it is unlikely that this will reach the very extensive circle to which the operation is known. Hence much may rest with the advice medical men give, though the public is prone to take matters into its own hands when such promising results are expected. Should Professor Lorenz ultimately succeed in demonstrating anything approaching a complete cure he will be a great benefactor to humanity and I shall try to be the first to congratulate him. In the meantime it seems to me that the odds are heavy against forcible reposition as they were against the open cutting methods and for the following reasons. The child walks late, usually about the end of the second year, and though she falls about the parents think she will grow out of the trouble, so that these cases are often not brought for treatment until the child has walked some time. Hence the head and neck of the femur are more or less deformed, the acetabulum remains very incomplete, the ligaments are overstretched, and some of the muscles are shortened and others lengthened. How is it possible to correct all this by any method? It is quite right to try to do our best to remedy the deformity but to run considerable risk in so doing, unless

we can guarantee something better than by older plans, seems to me to be scarcely justifiable. Of course, if one could promise something more permanent than has hitherto been done and more nearly reaching a perfectly anatomical and functional condition then one may run the risks after explaining their possibility to the parents. As this cannot be done it is better to adhere to more gradual plans in the interests of the patients and the surgeon.

As most of the soft parts which normally help to keep the bone in place are torn through before reduction, so-called, is accomplished and as the limbs are put up at about a right angle and kept so for many months, where can the pressure of the femoral head to mould and to enlarge the acetabulum come from? And as the gaps in the torn parts are filled and they become elongated it seems to me that a loose joint, very liable to displacement in almost any direction, is made and consequently secondary displacements—supposing a true reduction has been made—are common. Seeing that the head of the femur is larger than the acetabulum and of a different shape how can it possibly keep in place? Even by the open cutting plan when the acetabulum has been enlarged and shaped to the head it very frequently becomes displaced on walking unless ankylosis has occurred, and as in this operation it was found to be a fault to cut the muscles, surely when they are torn through the weakening effect must be at least as great. Moreover, in the "splits" position a large part of the femoral head is downward outside the acetabulum and the small part remaining in contact, even if it do so, would need constant pressure on the sole of the foot or through the knee to produce absorption. Why Professor Lorenz prefers patients aged four years for his operation I cannot understand, for walking increases the mischief and the earlier treatment is undertaken the more hope is there for improvement.

I am, Sirs, yours faithfully,

London, W. H. A. REEVES.

A CASE OF HERNIA INTO THE FOSSA DUODENO-JEJUNALIS.

To the Editors of THE LANCET.

SIRS,—In THE LANCET of Jan. 24th, p. 236, is a paper bearing the above title. This paper contains the record of a case of internal hernia, with comments upon the anatomical condition of the parts, but it completely ignores all the work that has recently been published upon this subject. The description given is clear and leaves one in no doubt that the condition found was one of left duodenal hernia. The fossa in which this hernia always lies is known as the fossa of Landzest. The fold bounding the orifice of the fossa in front is known as the plica venosa from the fact that it is raised up by the inferior mesenteric vein for which it forms in early life a sort of mesentery. There is neither need nor justification for any new term such as that suggested for the subject is already burdened by a florid and exuberant nomenclature. The hernia does *not* occur into the fossa duodeno-jejunalis; indeed, it is doubtful whether a hernia has ever occurred into this fossa. The probability is that the hernia is always congenital and the condition of the fossa in which it lies must therefore be studied in the fœtus or the young child. When examined thus early it will be found that a hernia into the fossa of Landzest and the fossa duodeno-jejunalis (the inferior duodenal fossa) are quite distinct. A specimen in the museum of St. Thomas's Hospital shows the hernia in an earlier stage than any other museum specimen in this country. The anatomy and surgery of the duodenal fossæ are fully discussed in the works of Jonnesco and Brösike and in my own work on "Retroperitoneal Hernia."

I am, Sirs, yours faithfully,

Jan. 31st, 1903. B. G. A. MOYNIHAN.

BRISTOL AND THE NON-VENTILATION OF SEWERS.

To the Editors of THE LANCET.

SIRS,—The Bristol argument is really based on a double fallacy. The first fallacy is that the Bristol sewers are non-ventilated and the exposure of this fallacy by your Special Sanitary Commissioner could scarcely be more complete.[1] The second fallacy is that Brighton and Croydon are ventilated towns. This is not true, either in a legal or a sanitary sense. The Bristol position is therefore doubly false and when we consider what the practical outcome of it is, or may be, it is perniciously false.

In regard to the second fallacy your Commissioner touches the real truth when he says: "The example of Bristol seems to indicate that the ventilation of sewers has been so badly managed in some towns that Bristol without any management has obtained [health] results which are quite as good if not better." "Badly managed" is perhaps not the most appropriate term to use in the circumstances, for the trouble does not really lie in "the management" but in the means of ventilation employed in the towns misnamed ventilated.

Brighton and Croydon have been singled out as examples of ventilated towns in this discussion, I presume, because they have adopted, to a large extent at least, the high shaft system. Now, if the grid system is inadequate much more so is the high shaft system. High shafts are altogether a delusion, having not only all the faults of the grid system but in a greater degree and are therefore less efficient as a means of ventilation under all atmospheric conditions. In addition they are most expensive and unsightly and, as in the present case, fraught with public danger in the false conclusions to which they are capable of leading sanitary authorities honestly desiring to do their appointed public duty. The true inference, therefore, to be drawn from the fact that the results at Brighton and Croydon are no better than those at Bristol is that the system at Brighton and Croydon requires improvement and not that the Bristol practice should be set up as a model to be copied by other towns.

Your Commissioner's article is a most invaluable one, not only within its own limits but in the questions to which it gives rise. For example, how is it that with such a splendid public health service we are continually seeing the public health break down under severe epidemic foul air disease? I am fully convinced that the key to the answer lies in the fact that the advantages of proper sewer ventilation to public health are not yet understood by sanitary authorities. Again, how is it that after so much discussion, scientific research, and costly experimentation the sewage disposal problem is to-day in the unsatisfactory condition it is? Again, I am convinced that the key to the answer is to be found in the fact that the solution of the sewage problem should, as I have submitted in my evidence before the Royal Commission, begin with the perfect ventilation of the sewers. Your Commissioner, therefore, has rendered a greatly needed service to the public and I trust it will have an immediate and practical outcome, for in a few weeks the bad sewer-gas period will be on us again.

I am, Sirs, yours faithfully,

W. BROWN.

Victoria-street, Westminster, S.W., Jan. 20th, 1903.

[1] THE LANCET, Jan. 17th, 1903, p. 202.

WHY IS NOT SMALL-POX SPEEDILY "STAMPED OUT" LIKE OTHER EPIDEMIC DISEASES?

To the Editors of THE LANCET.

SIRS,—This question is often asked, yet the answer is very simple. The only true check to the spread of variola among dense communities of people is systematic and efficient vaccination of all infants and the revaccination of children at the school age. Unfortunately this disease alone of all others has been made the sport of political schemers and place-hunters who are content to sell their birthright—vaccination—for "a mess" of unseemly pottage. Yielding to the ignorant outcry against the protective influences of sterilised lymph our Government has introduced the bogey of "the conscientious objector." As a practical illustration of the advantages of intrusting compulsory powers for vaccination to a central government authority directly concerned with the maintenance of public health and the prevention of epidemic disease I herewith send some details from a letter just received from a clergyman who has permanent charge of a mission station in the island of Barbados. Fortunately the authorities in this and many of our distant colonies are not fettered in their action by the wire-pullers of political parties, so that whatever is really beneficent for the community can be carried out under the advice of the executive medical officers.

The Government of the island, viewing with alarm the

rapid spread of small-pox among the native population in what may be called a virgin soil, "acted promptly" and "appointed lay vaccinators all over the island." The payment of 6*d*. a head to the wage-earning class gave a great impetus to the vaccination crusade, so that in the brief period of four months 100,000 people had been vaccinated and the epidemic brought entirely under control. We do well to contrast this result with the efforts of our Local Government Board to parley with the ignorance of the anti-vaccination leaguers. The epidemic which has prevailed for over three years and is now spreading rapidly in the Midlands at a very heavy cost to the rates is the direct result of the pusillanimous action of our executive authorities. What can the proletariat say now in opposition to this perfect method of providing immunity from the deadly effect of small-pox epidemics? The educated classes at least have a claim to protection from the ignorant and even criminal neglect of their poorer neighbours and servants. Is it possible that any of the opponents to vaccination are prompted to take a line directly antagonistic to the expert and scientific conclusions of unbiased investigators because by the decimating effect of uncontrolled epidemic disease populations and families are thereby kept in check? The *Times*, in its leading article approving of the establishment of the Imperial Vaccination League, says that "small-pox has been shown by a large amount of experience to be in great measure preventable by simple and harmless means."

The disciples of Jenner who can look back to the time when every infant was brought for vaccination as regularly as for baptism and can show the proportionate immunity from the ravages of small-pox *pari passu* with the spread of effective measures for stamping out the epidemic, have a right to claim national protection from such a fatal and disfiguring disease. Union is strength. It is important, therefore, that our leading statesmen, employers of labour, and those who have the training of the young, should coöperate effectually with the medical men and join the Imperial Vaccination League.

I am, Sirs, yours faithfully,

Jan. 31st, 1903. FREDERICK CHURCHILL, F.R.C.S.

MULTIPLE PREGNANCIES.

To the Editors of THE LANCET.

SIRS,—You may consider the birth of triplets worth recording as the mother and children have all thriven. The triplets were born at 36, Prospect-street, Plymouth, in February of last year and are now healthy and strong babies, all girls. The mother also is quite well and the King's bounty was kindly sent to her on my application to the Privy Purse Office through Sir Dighton Probyn. There were three separate placentæ.

I am, Sirs, yours faithfully,

GEORGE BATE, M.R.C.S. Eng.

Plymouth, Jan. 23rd, 1903.

THE NATIONAL HEALTH AND ARMY RECRUITING STATISTICS.

To the Editors of THE LANCET.

SIRS,—I venture to think that the views expressed in the leading article in THE LANCET of Jan. 31st, p. 315, headed "An Impeachment of the National Health," being a consideration of the points brought forward by Major-General Sir F. Maurice in his article in the *Contemporary Review* entitled "National Health: a Soldier's Study," will commend themselves to the majority of army medical officers having practical experience of army recruiting and the subsequent career of the accepted men when placed under service conditions. Neither medical nor army men will doubt the importance of the question raised, whether as viewed from the larger aspect of the general health or from the more limited sphere of the recruiting grounds, but the subject itself is not a new one. Several years ago Sir T. Crawford published a paper based on army statistics in which he deduced that the physique of the nation was deteriorating—an opinion opposed by the *Times* in a leading article; and among minor fry who have also contributed to the subject I may range myself, the conclusions being embodied in two communications to one of the leading journals in India in 1890 and being markedly in accord with those advanced in THE LANCET in the article referred to. Yet, whether new or old, its importance to the community is such that any new light which can be thrown upon it, and especially a presentation of it from the military side by one to whom the War Office and the country may listen, cannot but be acceptable; and, moreover, the desirability of ascertaining the true bearing of the facts is apparent.

Now I think it will be granted that no army can properly reflect the national characteristics and conditions unless it be composed of all sections and classes, in amount in proportion to their dominance or otherwise in the general population—an essential which conscription fairly carried out may be said to meet—and that no section in its physical and health aspect can be taken as a true representation of the whole community unless the conditions and circumstances capable of influencing the results are generally present and weigh equally on all the several components. In the case under consideration the question turns on the validity of the conclusions drawn from the data of army recruiting as elucidatory of the national state respecting physique and health. To detail fully all the points which may be advanced against this view would go far beyond the reasonable limits of a letter, but suffice it to suggest the following for consideration. Is it not a fair inference from the statistics that the majority of the volunteers for army service in height, weight, and chest measurement are below the average of our race? and does not a comparison of the recruit as we see him in the streets of the recruiting centres for the line with the passing mass of his fellow-countrymen and the experience of the inspecting medical officers as derived from the ranks of the passed recruits presented to them at the depots or at joining stations at home or abroad fully corroborate this inference from the figures? Do not the occupation columns show that among those presenting themselves in the recruiting offices labourers and servants largely predominate, while mechanics and artisans are few and the middle strata rarely figure; and are not the localities from which the majority are drawn the large towns and these giving anything but their best—poor material, regard it as we may? Would 1000 of our general population, or even 1000 of the classes and sections represented in the recruiting rooms taken generally give such a large proportion of rejections from inability to comply with the present physical standard or from bodily defects or diseased states (273 75 per 1000 candidates in 1900) as the results for many consecutive years indicate? Surgeon-General Balfour stated that "about two-fifths of the rejections arise from causes connected with general bad health or feeble constitution, and among the components of rejection figure defects and diseases attributable to bad and insanitary dwellings and bad feeding producing an impoverished and poor physique and opposing normal bodily development, constitutional debility, and impairment"; but granting that such conditions are too frequently to be met with can they be regarded as characteristic of the country as a whole and as producing such a ratio of defects as the recruit sections demonstrate? The more thought is given to the subject the more does the conclusion strengthen that the limited range of the community from which the recruit is drawn is such as to furnish no adequate basis to work upon on the question of decadence or otherwise of the race and that, to use the words of THE LANCET, "the health statistics of the class desiring to enlist in the army are not those of the population of Great Britain as a whole." What Sir F. Maurice's proportion of wastage—two only out of five effective soldiers at the end of the second year of service—shows is that the present recruiting grounds cannot supply a sufficiency of human material capable of withstanding the pressure of military life. We know well how this poor material succumbs to foreign service conditions and disease—what a gap it leaves in the numbers of a regiment required for active service; and the results show that it ought not to be subjected to conditions which it is manifestly unable to bear. It is true that the two of the five who do get beyond two years of military duty—the survival of the fittest—develop, as a rule, under the fostering influences of good food, good housing, gymnastic exercises, &c., into excellent army material, but why, in the face of the experience we now have, we should continue to draw from our present restricted and poor stratum only the necessary human basis on which rest in no small degree the prestige and security of our nation is one of those puzzles to which the average intellect cannot furnish a satisfactory answer. Nor is it apparent in what way the

medical profession can assist in solving this soldier's question of an adequate and efficient recruit supply beyond what is already well known. The causes which determine the physical and moral decay of humanity and the conditions which are illustrated in the recruiting offices are already apparent, and granting that the necessities are again set forth and right action taken thereon it cannot be supposed that the results can have any appreciable influence on recruit supply, it remaining in its present narrow limits, within the present generation. Meanwhile the army wants are present and urgent and what the recruiting statistics and the accumulated knowledge suggest is that the War Office, facing the facts, should place before the country the necessity of broadening and improving the recruiting area, so making the army a true representation of our race and drawing the recruits from those physical strata of our community fitted to bear the stress of military service; in other words, that the patriotic duty of defending our country should be generally borne and not relegated to sections of which the larger number of their components are from physical and other reasons unfitted to have such a national and Imperial responsibility placed upon them.

I am, Sirs, yours faithfully,

FRANCIS H. WELCH, F.R.C.S. Eng.,
Surgeon-Colonel (retired), M.S.

Lee, Feb. 2nd, 1903.

THE SURGICAL TREATMENT OF RHEUMATIC FEVER.

To the Editors of THE LANCET.

SIRS,—I have read with considerable astonishment the medical treatment mentioned in an article on the Surgical Treatment of Rheumatic Fever by Dr. J. O'Conor in THE LANCET of Jan. 24th, p. 228, and I am still more astonished to see that in THE LANCET of a week later there is no word of comment on his methods. His surgery is no doubt above reproach, but I must crave a few lines to point out that one of the most powerful drugs in the Pharmacopœia suffers quite unmerited disgrace at his hands. In my work, "Uric Acid," published in 1892, I showed that salicylates cured arthritis by eliminating uric acid, and that there are certain conditions—e.g., heat and perspiration—in which they are no longer solvents of uric acid but become precipitants of it. Hence in these conditions they not only fail to do good but may even do great harm, and in the fifth edition of the above-mentioned book I record a good many cases to illustrate these points. In a word, alkali with heat and sudorifics is a solvent of uric acid, salicylate with cold is a solvent of uric acid, but salicylate with heat, sudorifics, and alkalies is not a solvent at all. Dr. O'Conor says: "I have no hesitation in stating that this patient's heart has been practically ruined through my delay in operating." This sounds to me very like the old cry of "there is nothing like leather," but in my opinion the heart was ruined by the use of a powerful drug in a manner in which it could not possibly do anything but harm. I can only ascribe this truly terrible, and I have good reason to believe not infrequent, result to the fact that the professional mind has been so completely given over to the hunting of microbes that it has almost entirely lost sight of the solubility of uric acid and the chemistry and physiology that condition this. If salicylates properly given fail to relieve the arthritis and bring the temperature to normal in from 24 to 36 hours the disease is not acute rheumatism and the drugs should be given up and then surgery or any other treatment has the field to itself. In my book previously referred to I have mentioned that it has even been proposed to call the arthritis met with in India something other than rheumatism because salicylates fail to relieve it. A quite rudimentary knowledge of the chemistry of salicylates in their relation to uric acid would demonstrate that salicylates in India are never solvents of uric acid unless the patient is in a freezing chamber and covered only by one sheet. My book has now been 11 years before the profession and yet these important facts are to-day almost unknown, and I hear of similar mistakes in the use of the salicylates not in one direction but in all directions. I beg to agree with Dr. F. P. Atkinson[1] that "the greatest friend of truth is time," but meanwhile heaven help the poor patients whose hearts are exposed to the dire effects of these drugs, so powerful for good if given rightly but so powerful also for evil if given wrongly, and whose joints are to be exposed to the surgeon's knife because salicylates which could cure them easily in 36 hours are given under conditions which render all cure by them impossible.

I am, Sirs, yours faithfully,

ALEXANDER HAIG, M.A., M.D. Oxon., F.R.C.P. Lond.

Brook-street, W., Feb. 2nd, 1903.

[1] THE LANCET, Jan. 31st, 1903, p. 343.

CLEAN MILK *v.* BOILED MILK.

To the Editors of THE LANCET.

SIRS,—Dr. Clement Dukes in THE LANCET of Jan. 31st, p. 331, draws attention to the impairment of the nutritive value of milk by boiling it and its effects on those children who are brought up on it. I wish to indorse his views. So frequently have I been convinced that boiled, sterilised, pasteurised milks do not satisfy or nourish *all* children that in my practice I have for some time now advised bottle-fed children who showed signs of malnutrition, loss of weight, constipation, and pale flabby tissues to be given unprepared milk, and I can recall no case in which the result was not entirely satisfactory. All the children were those of well-to-do parents and had the advantage of drinking milk obtained from the best dairies in London where every precaution is taken to prevent the contamination of the milk. Still there existed the risk of these children drinking some disease-producing milk and if this can be prevented by the rapid cooling process advocated in America it behoves every practitioner to use his efforts to bring this into general use. A certain proportion of children who are brought up on boiled milk do certainly thrive, but it is necessary to supplement the milk by the addition of broth or raw meat-juice, &c., at a much earlier period than is required for those children fed on unboiled milk.

I am, Sirs, yours faithfully,

Brechin-place, S.W., Feb. 2nd, 1903. F. ASHTON WARNER.

THE ABUSE OF MEDICAL CHARITY.

To the Editors of THE LANCET.

SIRS,—My attention has been drawn to an article under the above heading in THE LANCET of Jan. 31st, p. 314, mainly based upon some statements in a lecture delivered by Mr. F. H. Bentham at the Bradford Liberal Club a few weeks since referring to the alleged neglect of inquiry as to the circumstances of the parents of children admitted into our hospital; and whilst I entirely exonerate Mr. Bentham from any intention to misrepresent the case it will be seen from the following extract from the annual report of the hospital submitted to the meeting of the governors held on Jan. 30th that in his remarks as quoted by you he has unintentionally done so:—

> Very many of the cases treated at the hospital are received on the recommendation of the medical gentlemen in the town, who naturally satisfy themselves that the position of the families is such as to justify an appeal to the charity, but the bulk of the in-patients are drafted into the hospital by the honorary medical staff from the out-patients' department, after careful examination and inquiry as to the circumstances of each family, and when such circumstances are found not to justify admission patients are invariably refused. A further inquiry is subsequently made by the house committee and, if deemed necessary, other investigations are instituted in the case of *all* in-patients, and by these means the risk of abuse of the charity is greatly diminished and the board is satisfied that little abuse, if any, prevails.

I am, Sirs, yours faithfully,

HERBERT J. JEFFERY,
Hon. Sec. Bradford Children's Hospital.

Bradford, Feb. 3rd, 1903.

THE TRAINING OF GYNÆOLOGICAL AND MONTHLY NURSES.

To the Editors of THE LANCET.

SIRS,—We are directed by the council of the British Gynæcological Society to request the favour of your insertion of the following:—

It is generally conceded that the present condition of the nursing world is in many respects unsatisfactory. There is apparently neither any accepted standard nor system of education, nor any reliable method of distinguishing well-trained from untrained nurses. Women are now able to term themselves "nurses," and thus may obtain most responsible work in that capacity, when their education and training have been quite insufficient to qualify them to

undertake it. There is no means by which trained nurses can be controlled or of freeing their ranks from those who prove themselves dangerous to the public and discreditable to their calling.

The special attention of the Gynæcological Society has been lately drawn to the nursing question. Its Fellows employ nurses chiefly for maternity or gynæcological cases, and constant complaints are made of the unsatisfactory character of the present education of such nurses. A most careful investigation of the whole subject on behalf of our society has proved, *inter alia*, that a great number of nurses pass through the larger general hospitals, and in still greater proportion through the smaller, without having had any training in the nursing of gynæcological patients, while that of monthly nurses varies from six weeks to three months in duration and is quite inadequate for the responsible duties they are called upon to discharge. For these reasons, the Gynæcological Society has resolved to move in the direction of establishing such examinational tests as will have the effect of bringing about those improvements which are obviously necessary in the education and supervision of gynæcological and monthly nurses. The society is strengthened in this determination by the excellent results achieved by the Obstetrical Society of London in the elevation of the education of midwives and by the Medico-Psychological Association in the improvement of the training and work of asylum nurses and attendants, in consequence of the systems of examinations and certificates instituted and carried on by those two societies respectively.

The British Gynæcological Society has therefore decided at once to institute examinations and to grant certificates in monthly and gynæcological nursing. The three cardinal principles which will be enforced are:—1. That every nurse certificated by the society must work only and entirely under the directions of qualified medical practitioners. 2. That no woman will be eligible for the society's examination unless she has had sufficient training both in general and special nursing. 3. That the society's certificate will be withdrawn from any nurse who at any future time proves to be unworthy of professional trust.

Medical practitioners employing such certificated nurses will thus not only have a guarantee that they are of good character and competent to perform the duties required of them, but also that they are under professional control and subject to rules of professional ethics which, it would seem, nurses generally are at present free to disregard. A representative board of examiners has been appointed and the examinations of the society will be held in future once in every quarter.—We are, Sirs, your obedient servants,

HEYWOOD SMITH, President.
J. H. SWANTON, S. JERVOIS AARONS, } Honorary Secretaries.

Hanover-square, W., Jan. 31st, 1903.

MEDICAL CORONERS AND THE APPOINTMENT OF THEIR DEPUTIES.

To the Editors of THE LANCET.

SIRS,—For many years you have advocated the appointment of medical coroners. You have done so for the reason that whilst the law in connexion with coroners' inquests can be, and is, learnt readily by an educated man, the medical details in such inquiries cannot so easily be acquired without a previous medical training. Medical candidates for vacant appointments as coroners have been successful owing to the large measure of support which you and the editors of other medical journals have given them. One would naturally imagine, therefore, that medical coroners in making their appointments of deputies would continue to support the principle that a knowledge of medicine is an essential to the office of coroner. What do we find, however, in London? To quote instances, Dr. G. Danford Thomas appoints Mr. Schröder and Mr. Danford Thomas. Neither of these has any medical training. Dr. F. J. Waldo also appoints as his deputy Mr. Danford Thomas. Strange to say, Mr. Troutbeck, a lawyer, appoints a medical practitioner and it is greatly to his credit that he does so. I do not question the right of these medical coroners to appoint whom they like and do not question the capacity of the "legal" deputies to carry out their duties faithfully and honestly. I merely call attention to the anomaly that medical coroners do not carry out in the appointment of their deputies the principle upon which they received the support of the medical press and their professional colleagues when they themselves were candidates for the office of coroner. Is this being true to their profession? Is it not likely to influence the county councils in the future to appoint other than members of the medical profession and to cause them to consider that medical knowledge is not an essential in making such appointments?

I am, Sirs, yours faithfully,
A MEDICAL DEPUTY TO A MEDICAL CORONER.

Feb. 4th, 1903.

THE MEDICAL EXAMINATION OF LUNATICS IN WORKHOUSES.

To the Editors of THE LANCET.

SIRS,—*Apropos* of your leading article in THE LANCET of Jan. 24th, p. 249, on the Medical Examination of Lunatics in Workhouses a recent experience of mine may be of interest. A working man patient of mine became maniacal and on my advice the relatives informed the relieving officer. After some delay I received from him a scrap of paper on which he had written a form of certificate to the effect that —— was a person who should be placed under care and control. The relatives informed me that if I signed this the relieving officer would come with two assistants and remove him to the workhouse, presumably by force if necessary. I naturally declined to sign any such document and sent a message to the effect that if he wished me to certify the man a lunatic I would do so, but only on the proper form. This eventually he sent and the man was taken before a magistrate and certified in the usual manner. On the relieving officer coming to pay the fee he expressed surprise at my objection to sign his form and told me that had he not been pressed for time he would have informed the poor-law medical officer who always signed a form in this manner and sent the patient to the workhouse where the proper certificate was filled up by the infirmary medical officer who also pocketed the fee. I found his statement to be correct on inquiry of the poor-law medical officer who seemed to think that he was unfairly used but had obeyed the instructions of the guardians. My contention is that the scrap of paper in question is either for the time being a legal certificate of insanity—in which case surely the man who takes the responsibility of signing it should receive what fee there is—or that it is a valueless expression of opinion and the relieving officer who forcibly removes a man from home on the strength of such a document is acting in an illegal manner.

I am, Sirs, yours faithfully,
M D. LOND.

Feb. 3rd, 1903.

THE SUPERVISION OF NURSING HOMES.

To the Editors of THE LANCET.

SIRS,—In view of the scandals that have recently been made public about nursing homes I should be very glad to know whether the medical profession as a body indorses your views as to the desirability of registration and inspection and if there is any chance of active measures being taken to secure legislation on the subject. My own idea is that all nursing homes should be placed under the supervision of the county or borough medical officers of health, though I fear that hardworked body of gentlemen will not support my suggestion. Inspection could be limited to the food and sanitary condition of the house so long as the patients were under constant professional care. For chronic cases some such arrangement as obtains for the medical supervision of certified mental cases could be legally enacted.

I am, Sirs, yours faithfully,
MATRON OF SUBURBAN NURSING HOME.

Jan. 24th, 1903.

THE UNIVERSITY OF LONDON AND THE ENGLISH ROYAL COLLEGES OF PHYSICIANS AND SURGEONS.

To the Editors of THE LANCET.

SIRS,—Mr. F. C. Langford in his letter in THE LANCET of Nov. 22nd, 1902, p. 1424, wanders off the subject matter to indulge in an unnecessary demonstration of

the superior abilities of the Conjoint man as compared with the university man. This can only be considered unfortunate. Hitherto the whole crux of the question has been taken to be not a matter of personal ability but of opportunity in the case of the two classes of men The larger number of students first enter at a hospital and then consider what qualification they will aim at; these form the Conjoint men, for having paid their fees, &c., they do not feel disposed to retrace their steps and undergo the ordeal of a matriculation and preliminary scientific examination. A few men give anxious consideration to the question of a qualification before they enter a hospital; most of such shape their course for the university. When I joined a London hospital I was one of four who had decided to go in for the university; the remaining 56 students were Conjoint men. It might be reasonably expected that out of 56 men there would be a greater probability of a display of brilliant work than out of a forlorn number of four men. But even apart from any such probability there was no question about the capabilities of the Conjoint men as a whole and of two of them in particular, one of whom took all the hospital scholarships, and the other exhibited consummate ability in the numerous resident posts he held. We university men were a scratch lot. Opportunity and an indulgent Providence rather than personal merit made us what we are.

Mr. Langford gives instances of examinational croppers suffered by the intellectually great. We all know of such—the explanation of them belongs to that hazy land of speculation where the voice of the fool alone is heard pondering on the imponderable—a striving and a striving and an ending in nothing. To Mr. Langford and all other Britishers who are consumed by a wearing anxiety about the quality of a man's qualifications let me say that throughout South Africa we pay no regard to such matters; with us a "doctor" is a properly qualified practitioner. By his merits do we judge a man; he may be an M.D. of any university, but should he make an ass of himself and a mess of his cases we forthwith catalogue him among the fools. Throughout this letter I have spoken of "Mr." Langford—may Providence once more be indulgent to me for thus bending the knee in the house of Baal. Let all Conjoint men take heart from the opinion of a Rhodesian wayside store-keeper on university graduates, many of whom float round South Africa like dentists. In a burst of confidence he said to me, "You know, doctor, 'Varsity men are no good as waiters"!

I am, Sirs, yours faithfully,

Transvaal, Dec. 30th, 1902. AFRICANDER.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

The Walker Hospital at Simla.—Improvements at the Medical College, Calcutta.—The Export of Goats' Skins and the Practice of flaying Goats alive.—A Successful Crusade against Mosquitoes.—The Epidemic of Plague.

AMONG the recent improvements at Simla is the new hospital where Europeans can find improved accommodation during their hours of illness. The old and unsuitable wards formerly used have by the gift of the generous donor been replaced by a properly equipped building erected on the lines of the Eden Sanatorium at Darjeeling. Mr. Walker's handsome gift was of the well-known Gordon Castle Estate, but Government acquired this for administrative buildings, and the present site of the new hospital has more suitably been found on a spur situated at the back of Snowdon. The main building, consisting of a central portion with cross arms or wings at the end, is two-storeyed. It is very largely composed of timber, but ample provision has been made against the risk of fire.

The new pathological and physiological building to be added to the Medical College, Calcutta, also requires notice. It forms one more step in the reconstruction of the college upon modern lines. The first improvement undertaken was the anatomical block and then came the chemical block, both of which are in full occupation. The present addition is three-storeyed and is designed to harmonise with the two others. The entire fitting up has been carefully thought out and will render this building when completed the best institution of its class in Asia. It is anticipated, however, that the beginning of 1904 will be the earliest date by which it will be ready for use. On the ground floor will be rooms for normal histology and physiological chemistry and an experimental class-room, besides small rooms for the professors, diagrams, photography, &c. On the first floor will be rooms for morbid histology and bacteriology besides the large theatre. The second floor will be chiefly taken up with the museum.

The common practice of flaying goats alive in different parts of India has been nurtured by the demands for long necks in the skins. The export of goats' skins is enormous and a certain percentage—said to be only small—have long necks. The religious method of killing is to decapitate by a cut through the neck, but for long necks an incision is made round and under the jaws and over the top of the head, the skin being turned back, and then the head severed from the body. This, of course, is horrible cruelty and one could wish that only 1 per cent. of exported skins as stated was at least not exceeded, but this is doubtful. The practice is being actively investigated by the honorary secretary of the Calcutta Society for the Prevention of Cruelty to Animals, and in a note he urges on consumers or users to reject long necks and to alter the bases of measurements, fixing it from the base of the neck instead of from the apex. If the trade would coöperate in this direction there would be no inducement for the continuation of this atrocious form of cruelty. This question deserves to be ventilated throughout the whole of Europe and especially in the countries to which these skins are exported.

An effective crusade against the anopheles mosquito has been carried on during the past year at Jaidulpur in the Central Provinces. The local conditions were particularly unfavourable in consequence of numerous tanks and open drains, but mosquito brigades have set to work actively. Formerly 28 per cent. of the patients in the hospitals were cases of malaria fever, but during the last five months the percentage has dropped to 11·55 per cent.

Upwards of 16,000 deaths from plague were recorded throughout India for the week ending Jan. 10th. This is an increase of 511 on the previous week and 5829 more than in the corresponding week of last year. The Bombay Presidency reported 8340 deaths, an increase of 1045; the Bengal Presidency reported 1854, an increase of 92; the United Provinces 1712, an increase of 52; and the Madras Presidency 596, an increase of 151. The Punjab alone reported any decrease—viz., from 2238 to 1736. Other returns of importance are: Calcutta, 29 deaths; Bombay city, 352 deaths; and Karachi, 25 deaths. In all three of these cities plague is increasing, especially in Bombay, where 169 additional deaths occurred during the past week. The Hyderabad and Mysore States, the Chitral Provinces and Berar, continue to be infected. A commission has been appointed to inquire into the lamentable accident which occurred in the Punjab in connexion with inoculation. Without any disparagement to the members appointed I think that officers should have been selected who are well acquainted with the methods of manufacture of the prophylactic serum and of the practice of plague inoculation. The President of the Commission is a judge, not a scientific expert, and in an investigation of this kind it is difficult to see where his abilities can be utilised.

Jan. 15th.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

Health of the City.

THE returns of the medical officer of health, Dr. A. Hill, for the week ending Jan. 31st, show improvement in some directions and some cause for anxiety in others. The death-rate was 17·1 per 1000 against 21·4 the previous week, but, on the other hand, there are an outbreak of small-pox and a large number of cases of scarlet fever. There are now 18 cases of small-pox in the isolation hospital, one patient having died during the week. 66 fresh cases of scarlet fever were notified during the week, the total number in the hospital being 475. The type is not a virulent one, fortunately. There is no doubt that the dissemination of small-pox is caused mainly by tramps who occupy the tramp wards at workhouses and by the common lodging-houses of the city. The difficulty of dealing with these carriers of contagion is almost insurmountable. Of course they are isolated and

complete disinfection is carried out as soon as the discovery is made, but in many cases the mischief has already been done. In connexion with this subject a circular letter, signed by the Lord Mayor, the chairman of the health committee, and the medical officer of health, has been addressed to the medical practitioners of the city, pointing out that chicken-pox has been added to the list of notifiable diseases, the object being that all cases of chicken-pox in children over seven years of age may be visited by the medical superintendent of the hospital with the view of promptly discovering any modified case of small-pox that may be among them. That this course has proved to be justified is shown by the fact that in several instances cases of small-pox were found. Of course, all these examinations are made in consultation with the ordinary medical attendant or with his consent.

The New Licensing Act.

One of the most emphatic attempts at a needed social reform is exhibited in the powers of the new Licensing Act in dealing with drunkards and drunkenness. Some typical instances have been already dealt with by the magistrates of the city where the requisite number of previous convictions have been proved. Several separation orders also have been obtained by the husbands of inebriate wives.

St. John Ambulance Association.

The annual meeting of the Birmingham branch of this association was held on Jan. 21st under the presidency of the Lord Mayor. The accounts showed a surplus of £19 odd. Four classes had been held during the year in connexion with manufactories and the attention of employers of labour was called to the importance of inaugurating classes in connexion with their works. It was pointed out that the Birmingham centre was formed in 1880 and that it had qualified nearly 8000 men and women in rendering first aid. Last year 22 classes had been held and 284 members had received certificates. The Lord Mayor was of opinion that it should be made compulsory that most public servants should hold certificates. The advantages and the sense of security he thought would be obvious. The Birmingham corps had seven divisions with a membership of 150, which it was considered should be greatly increased. Votes of thanks to the medical officers and others were passed unanimously.

The Women's Hospital.

A strong appeal has been issued for funds towards the building of a new women's hospital in the city. At a meeting held on Jan. 15th the following resolution was passed:—

That the meeting is of opinion that it is necessary to build a new hospital on freehold land as soon as possible, with beds for 40 patients, and also a new convalescent home with accommodation in proportion.

The reasons for desiring additional space and modern equipments were pointed out by the President who stated that a sum of £30,000 was needed to realise their expectations. Already large sums have been promised and the enthusiasm and energy with which the work has been commenced have occasioned much encouragement.

Midland Counties Home for Incurables.

The annual report, read at a meeting on Jan. 16th, showed that while the need of this institution continued to increase in every direction, the expense had been kept within the income for the year. This fact in the history of such homes cannot but be regarded as satisfactory. The subscriptions for the year amounted to £2245, the donations to £289, and the patients' payments to £487. The total amount collected for the third section extension fund is £2209, but in regard to this extension the committee recommended the governors to rescind the plans for a chapel and recreation-room in one building and to authorise the work being undertaken in two separate portions, the nurses' dining-room and the recreation-room being put in hand at once. A new plan had been prepared containing a room suitable for week-day entertainments and also when required for Sunday afternoon services. Various legacies were announced and votes of thanks were accorded.

The Queen's Hospital.

At a meeting held on Jan. 30th, Dr. J. G. Emanuel was elected to the new post of casualty physician and Dr. Arthur Stanley Barnes was appointed pathologist to the hospital.

Feb. 3rd.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Liverpool Royal Infirmary: Annual Meeting: Changes in the Honorary Staff.

THE annual meeting of the friends and supporters of the Royal Infirmary was held in the board-room on Jan. 29th; Mr. T. Sutton Timmis (the President) occupied the chair. The committee lamented the loss by death of Mr. William Rathbone, its senior member, whose election dated back to 1860. He took an active part in building the present infirmary and to him the charity was chiefly indebted for the existing admirable nursing system. Under the operation of the laws Dr. Richard Caton's term of office expired in July, 1902. Appointed in 1886, he worked for 16 years, to the immense benefit of both patients and students, and had earned the friendship and respect of all. So also in November, 1902, after a devoted service of 26 years, came Sir William Mitchell Banks's retirement in the same circumstances. Both as a surgeon and a professor his long connexion with the hospital had been of inestimable value. By an arrangement with the committee, and by the courtesy of his colleagues, ten beds in the surgical wards are still at his disposal, whereby the benefit of his advice and experience will be retained for some time longer. To the posts of honorary physician and honorary surgeon, rendered vacant by the retirement of Dr. Caton and Sir William Banks, Dr. John Hill Abram and Mr. George Gibson Hamilton had been respectively elected. Dr. E. E. Glynn and Mr. T. C. Litler Jones had been elected to the vacancies caused by the promotion of the latter two gentlemen So great had been the progress within recent times of surgical science that a rearrangement of the operating theatre was deemed wise. The two new theatres that had been constructed through the munificence of Mr. Ralph Brocklebank were opened in October last by Sir Frederick Treves. They had in practice proved, as anticipated, all that could be desired. Each honorary surgeon had now a separate theatre; thus the harassing delay to patients awaiting operation was avoided, while every modern appliance to insure their speedy recovery had been adopted. The number of major operations had risen from 770 in 1881 to 1372 in 1901. Through the generosity of a member of the committee an electrical department for the treatment of skin diseases had been opened. 3415 patients had been treated in the house and 20,441 in the out-patient department, giving a total number of attendances of 78,017. The average number resident was 244. The expenditure had been £14,800 and the receipts £12,957. The debt now stood at £2809. The chairman of the committee (Mr. E. Kewley) made a feeling allusion to the death of Mr. Hamilton B. Gilmour which occurred on Jan. 24th. The late Mr. Gilmour had been closely connected with the infirmary for over 30 years and was chairman of the general committee for 18 years. Mr. James Lister was elected as President for the ensuing year. Mr. Lister is also an old member of the committee, having served on that body for nearly 30 years. Mr. Sutton Timmis (the retiring President) announced his intention of contributing 200 guineas to the funds of the charity.

Another Increase in the Number of Small-pox Cases.

According to the report of the medical officer of health presented to the health committee on Jan. 29th, it appeared that there were 274 cases of small-pox under treatment in the corporation hospitals. 51 fresh cases were reported, as against 42 in the previous week. The outbreak in the Prescot workhouse and neighbourhood is, happily, abating. 23 cases are under treatment at Wigan.

Liverpool School of Tropical Medicine: Dr. A. Logan Taylor's Visit to the Gold Coast.

The Governor of the Gold Coast, Sir Matthew Nathan, in a letter dated Accra, Jan. 10th, acknowledges that so far as he can judge from official and non-official opinions, Dr. Logan Taylor, who had been sent out by the Liverpool School of Tropical Medicine, had already effected considerable improvement in the sanitary condition of Cape Coast Castle, and asked that he might continue as health officer there until the arrival of one of the assistant colonial surgeons who takes considerable interest in sanitary work and who was due to return to the colony about the middle of March.

Feb. 3rd.

NORTHERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENT.)

The Visitor of the General Medical Council for 1903.

I AM pleased to announce that Professor Sir George Hare Philipson has been appointed by Sir William Turner, the President of the General Medical Council, on behalf of the General Council of Medical Education and Registration of the United Kingdom, the visitor during the year 1903 of the final examinations of the University of Edinburgh.

Social Medical Meetings in Gateshead-on-Tyne.

The sixth annual dinner of the Gateshead Medical Association was held on Jan. 14th at the Royal Hotel. The President of the association, Dr. H. J. Gilbert, occupied the chair and was supported by Mr. John Todd who acted as vice-chairman. Nearly all the medical practitioners of the town were present and a most enjoyable evening was spent. About 40 members and guests sat down to dinner, among the guests being Mr. Rutherford Morison of Newcastle and Dr. H. B. Densham of Stockton-on-Tees. The chief toast of the evening—"The Gateshead Medical Association"—was very ably proposed by Mr. Rutherford Morison who spoke of the many important advantages derived from such an association and the unfortunate lack of business principles in medical men generally, and he bestowed a well-deserved eulogium on Dr. Alfred Cox who was the pioneer of the association, and to whom the great success which attended it in bringing together the practitioners, both medically and socially, was due. He also said that Dr. Cox was not only the pioneer but the moving spirit in the medical organisation in the counties of Durham and Northumberland, which organisation had recently been attended with very great success and served as an example to the rest of England.

Gateshead Dispensary.

The annual full and fancy dress ball in aid of the Gateshead Dispensary was held on Jan. 16th in the town hall. More than 200 guests were present, the majority being arrayed in fancy dress. It was the most successful gathering which has been held for some years, the company including a considerable number of medical men. Mr. Andrew Dougall and Mr. A. White acted as honorary secretaries.

Feb. 2nd.

WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

Carmarthen Asylum.

WHEN the Commissioners in Lunacy visited the Carmarthen Asylum in the autumn of last year they reported that the institution was overcrowded and that there were 26 patients in excess of the number for which there is accommodation. In his annual report the medical superintendent (Dr. E. Goodall) states that at the end of 1902 there were 650 patients in residence, the asylum being full on both sides, but that if the patients from other counties than those for which the institution is provided—viz., Cardigan, Carmarthen, and Pembroke—were excluded there would be 33 vacancies. If patients are taken exclusively from the three counties the present accommodation will suffice for another five or ten years. There are 42 private patients in the asylum and as a result of a recommendation contained in Dr. Goodall's previous annual report a sub-committee has had under consideration the further provision of accommodation for this class of patient. It was recommended by the sub-committee that from 15 to 30 acres of land should be acquired and that an additional block of buildings should be erected, but the committee of visitors refused to carry out the recommendation. The medical superintendent deals in his report with the question of the boarding-out of harmless patients and appears to be of opinion that the weekly cost would not be less than 10*s.* per patient, so that in the case of the Carmarthen Asylum, where the average weekly cost is less than 8*s.* 9*d.*, no actual economy would result from the adoption of the system. Dr. Goodall considers some of its advantages to be that convalescents are removed from the asylum buildings with their associations and disturbing sights and sounds and are placed in a half-way house on the road home, while enfeebled chronic cases are provided for under more home-like conditions. In 1901 tuberculous diseases accounted for 40 per cent. of the total number of deaths in the asylum, but in 1902 this percentage was reduced to 29.

Newport Medical Society.

At the meeting of the Newport Medical Society held on Jan. 29th it was recommended that several hand ambulances should be provided at suitable centres in the town for the removal of accident cases to the hospital. Dr. William Sheen of Cardiff gave a description of the diseases of the umbilicus with a summary of the abnormal conditions met with there. He referred to the meagre manner in which the subject was dealt with even in the latest and standard text-books, and said that he had been at some pains to collect data and cases of the various conditions found. He classified the morbid conditions under the following headings:—Hæmorrhage, septic and infective processes, syphilis, fistulæ (fæcal, urinary, bilious, and purulent), conditions dependent upon the persistence of the omphalo-mesenteric duct and vessels, conditions dependent upon the persistence of the urachus, hernia, and tumours (innocent and malignant). In connexion with infective processes Dr. Sheen referred to the case of the island of St. Kilda in which about 80 per cent. of the infants died from the "nine-day fits," a condition which was found to be due to infection of the umbilicus with the tetanus bacillus.

Newport and Monmouthshire Hospital.

The new buildings connected with the Newport (Mon.) Hospital were first occupied last year, so that the annual report of the directors of the institution is of more interest than usual. The number of in-patients treated during 1902 was 898, an increase of 172 over that of the previous year. The expenditure amounted to £4596 and the receipts to £5863. Included in the latter sum are £1400 collected weekly by the working men of the town. There is still one of the hospital wards unoccupied.

Royal United Hospital, Bath.

The annual meeting of the subscribers of this institution was held on Jan. 28th under the presidency of the Mayor. The medical report stated that during 1902 the in-patients numbered 1389 against 1321 in 1901. 7891 out-patients were attended, a decrease of 103 as compared with the previous year. 349 patients were visited at their homes as compared with 245 in 1901. The financial statement showed that the total receipts amounted to £5774, and that the total adverse balance now amounted to £4297. The meeting unanimously decided that in future, as far as advisable, a charge shall be made to those in-patients who can afford to pay something. The fee shall not exceed two guineas weekly and all such cases shall be treated in the general wards on the same status as ordinary patients. A resolution, which was the unanimous recommendation of the medical staff—namely, that the resident medical officers shall discontinue to visit patients at their own homes—was agreed to.

Bath Water-supply.

Allusion has already been made in THE LANCET of Nov. 1st, 1902, p. 1225, to the proposals of the Bath corporation for increasing the water-supply of the city. At the end of October last the city council decided by 13 votes to seven to promote a Bill in the ensuing session of Parliament to enable works to be carried out at an estimated cost of £44,000 but a persistent minority of the inhabitants has endeavoured, fortunately without success, to defeat the desires of the majority. Although at the statutory meeting of the ratepayers which was held on Dec. 20th a resolution consenting to the promotion of the Bill was carried by 126 votes to 52 a poll was demanded the result of which shows that 6344 ratepayers are in favour of the Bill and that 1591 are against it. The action of the city corporation is thus sufficiently justified.

Feb. 3rd.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Queen Victoria's Jubilee Institute for Nurses.

THE report of the council of the Scottish Branch of Queen Victoria's Jubilee Institute for Nurses for the year 1902 shows that the work of that admirable and most valuable

institution has been progressing and developing in a satisfactory manner. The annual income, however, has not increased proportionately to the demand for nurses. At the end of October, 1902, the Scottish council was responsible for the maintenance of 51 nurses and probationers. During the year 18 candidates entered the training home for the required month of probation before receiving hospital training; of these five failed. 34 probationers who had received hospital training entered the home for six months' district training; of these one failed. 31 nurses completed their training. Two nurses completed their training in the Higginbotham Home, Glasgow, and two in the Dundee Home. Lectures were given during the year on hygiene, fevers, and diets, obstetrics, district nursing, and sick cookery. 31 nurses on completion of their training were engaged from the home by local committees. 30 nurses resigned during the year. 11 new branches were established by local committees and on showing that the required conditions were fulfilled were affiliated to the institute. The superintendent and assistant inspector made 176 inspections of single nurses and small homes. There are now 224 Queen's nurses in Scotland under 150 affiliated branches, of which 24 are under two county associations. With regard to the work done during the year in Edinburgh by the nurses from Castle-terrace and by the two nurses in Leith the visits paid numbered 103 and 474 respectively. There was during the year an increase of 397 cases and 10,686 visits. The superintendent reports that the work had been very heavy as there had been no addition to the staff to meet the increase in work. The nursing of maternity cases showed a great increase, while there had also been a considerable number of operation cases. The ordinary income amounted to £4334 12*s.* and the ordinary expenditure to £3164 17*s.* 11*d.* The council regrets that it has again to draw upon its small amount of available invested funds to meet this excess of expenditure. It is hopeful that the special appeal at present being made in the interests of the Institute by the Duchess of Buccleuch on behalf of "The Queen Victoria Memorial Endowment Fund" will be largely responded to. A summary of the work done by the Edinburgh nurses gives the following figures as showing by whom patients were recommended:—from dispensaries, 720; from hospitals, 238; by clergy, 51; by district visitors, 156; by patients and their friends, 285; by medical men, 3240. Of the cases nursed 1725 were medical, 1122 were surgical, 393 were gynæcological, and 1402 were obstetric.

Induction of the new Principal of the University of Edinburgh.

A meeting of the Senatus of the University of Edinburgh was held in the Senate Hall, Old University Buildings, on Jan. 31st, when Sir William Turner was formally inducted as Principal of the University in room of Sir William Muir, resigned. The proceedings were in private. Professor A. Crum Brown, as senior professor, presided and the senior dean, Professor Chrystal, presented the new principal to the president of the Court. The secretary to the Senatus, Professor Sir Ludovic Grant, Bart., read the commission appointing Sir William Turner to the principalship and at the completion of the formal induction ceremony his late colleagues in the professoriate cordially welcomed Sir William Turner as the new principal.

The Chair of Anatomy in the University of Edinburgh.

For the remainder of the winter session the entire responsibility and management of the anatomy department in the University of Edinburgh will be in the hands of Dr. David Hepburn who at present holds the post of lecturer in regional anatomy and principal demonstrator of anatomy in the department. This arrangement has been made in order to enable Sir William Turner to devote his attention to his new duties as principal.

Edinburgh Royal Blind Asylum and School.

At a meeting of the directors of the Royal Blind Asylum and School, Edinburgh, held on Jan. 26th, the directors after other business considered a report from Dr. George Mackay, ophthalmic surgeon to the Royal Blind Asylum, on the eyesight of the women and children at the West Craigmillar Asylum. The report concluded by stating that nearly one-third (31·8 per cent.) of all the cases admitted owed their blindness to purulent inflammation of the eyes occurring in the newly born through want of simple precautions in cleansing the eyes immediately after birth. The directors agreed in view of the great significance and importance of this statement that Dr. Mackay's report should be sent to all local dispensaries and medical institutions.

Health of Aberdeen: the Increase in Infantile Mortality.

At a meeting of the Aberdeen Secondary Class Teachers' Association on Jan. 28th Professor M. Hay delivered a lecture on the Increase in Infantile Mortality. After quoting Addison's Vision of Mirza on the hills of Bagdad, he pointed out that this vision of the bridge of life could be dealt with in a scientific manner, and this he proceeded to do by means of diagrams in which he showed that the death-rate in the first year of life in Aberdeen was enormously high, but that there was a reduction in mortality during the school age and at other periods during the last 25 and 50 years. In Aberdeen, as he had pointed out in reports to the town council, the infantile mortality showed an increase instead of a decrease, having within the last 25 or 30 years risen from 146 to 176 per 1000 per annum, or one in six of all born. If this high rate of mortality existed among lambs or calves or foals it would have attracted greater attention long ago. Professor Hay proceeded to point out that, while many of these deaths of infants were due to prematurity and defects of development, yet a great proportion was due to the increased use of the feeding-bottle as a substitute for nursing and the indiscriminate feeding of infants with food which, while suitable enough for adults, was as poison to them. Then the chances of children in the first year dying from whooping-cough and measles were enormously greater than at a later period. While no Scottish or Aberdeen mothers would willingly injure their children, yet there was a vast amount of ignorance and thoughtlessness amongst them. To him the time did not seem to be far remote when the question of the preservation of infants would become one of State importance. What they needed for themselves and their children was more fresh air. That was much required in their houses, especially in their poorer houses. He believed that the time was coming when it would be regarded as foolishness to have windows continually shut. On the motion of Herr Hein, a hearty vote of thanks was awarded to Professor Hay for his excellent lecture and Professor Hay, in acknowledging this, stated that while he preferred the natural system of ventilation for houses there was not sufficient cubic space for it in schools, and therefore artificial ventilation had to be resorted to.

Aberdeen University Medical Society.

A meeting of this society was held on Jan. 23rd, Mr. G. G. Macdonald being in the chair.—Mr. W. W. Lawson described a case of Congenital Cystic Hygroma which occurred in a child and filled up all the triangles on the left side of the neck, extending round to the right side also. No operation was performed and the child died from dyspnœa.—Mr. W. Clark Souter described a case of Suppurative Perforating Appendicitis which occurred in a girl, aged 13 years. Constipation varied with occasional diarrhœa had been observed for six weeks previous to treatment, but symptoms of appendicitis did not present themselves till within four days of operation and death. The appendix was found to be ulcerated almost to its base, near which it was perforated. A fæcal concretion of the size of a raisin was extracted.

Feb. 2nd.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Small-pox in Dublin.

ON Feb. 2nd a woman believed to be suffering from small-pox was removed from a tenement house in Church-street to the isolation wards, North Brunswick-street. There were 25 other persons in the house from which she was removed and they have all now been conveyed to the refuge in Nicholas-street while the house is being disinfected.

Cork-street Fever Hospital, Dublin.

At a meeting of the committee of management of Cork-street Fever Hospital, which took place on Jan. 29th, Dr. Herbert U. Byrne was elected visiting physician.

Jervis-street Hospital, Dublin.

Dr. Edward FitzGerald Stapleton was elected by the

governors surgeon to Jervis-street Hospital in room of Mr. Austin Meldon who has resigned.

The Belfast Maternity Hospital.

At a meeting of the governors of the Belfast Maternity Hospital, one of the oldest medical charities in the north of Ireland, held on Jan. 27th, Professor John W. Byers was elected physician. This hospital has recently been placed upon a new constitutional basis and it is intended in a short time to remove from the present situation in Clifton-street and to erect a new and more commodious lying-in charity. The appointment of Professor Byers has given great public satisfaction, as it is at this hospital that the students of the Belfast Medical School mainly obtain their midwifery practice, and it was felt by the authorities of the hospital that the occupant of the chair of obstetrics at Queen's College, Belfast, should, as is the case in Edinburgh, be a clinical teacher at the Maternity Hospital.

Ulster Medical Society.

The third meeting of the session of this society was held in the Medical Institute, Belfast, on Jan. 29th, Dr. John Campbell, the President, being in the chair. Dr. Henry Whitaker (medical superintendent officer of health) opened a discussion on the Notification of Infectious Diseases and there was a large attendance, as in the circular summoning the members it was stated that the council of the society had heard with great regret that grave charges had been made in the City Council and elsewhere with regard to the notification by medical practitioners of illnesses as infectious without sufficient grounds. The council of the society felt that it had not sufficient evidence to warrant it in taking any direct steps in this matter; but with a view to prevent in future such practices, if they had occurred through carelessness or otherwise, it had arranged this discussion on the working of the Notification Act. Members were therefore specially requested to be present at this meeting, as such allegations seriously involved the honour of the profession. In his address Dr. Whitaker pointed out how cases had been notified on insufficient grounds. In the subsequent discussion some of the members thought the matter must be left in the hands of the public health committee, as without full evidence the society could not take action, and it was elicited that of three medical men who were blamed one was dead and only one was a member of the society. Some of the speakers pointed out that the Notification Act was carried out most imperfectly, that far more cases of typhus and typhoid fever occurred than were reported, and that medical men in better class practice did not report cases as they should, and that the part of the Act requiring heads of households—as well as the medical men—to notify cases of infectious diseases was completely in abeyance. Further, some of the speakers found fault with the proposed situation of the infectious diseases hospital, owing to its distance from the city. Finally, after a long discussion, which showed clearly that the Notification of Infectious Diseases Act in Belfast was by no means fully in force, it was decided to ask the council of the Ulster Medical Society to consider the question of the action of members of the medical profession in this matter; and the honorary secretary was instructed to ask the public health committee to provide details of cases in which there had been defects on the part of medical men in carrying out the provisions of the Act.—Three new fellows and two new members were elected, and Dr. William M. Killen showed a series of interesting eye cases.

The Belfast Hospital for Sick Children.

At the thirtieth annual meeting of the subscribers to this institution it was reported that during the year 1902 there were treated in the wards of the hospital 694 cases with 26 deaths; while 5916 new cases were treated in the extern department (2736 medical, 1364 surgical, 1196 eye and ear, and 620 dental). The number of patients treated in the wards was larger than in any previous year in the hospital's history. A large number of senior students are in attendance at the hospital cliniques. It is to be regretted that the financial condition is not satisfactory, as there had been spent £650 more than was subscribed, and the year before a sum of £230 had been spent more than the income. The deficit is largely due to the fall in the number of legacies, but as Lady Jaffé (the wife of the treasurer) has offered to give £100 if before July 1st ten others will join her in giving similar amounts it is hoped that the institution will soon be out of debt.

Rainfall in January in the North of Ireland.

January has been the wettest first month of the year since 1886, as the rainfall has been 5·33 inches, falling on 24 days.

Health of Belfast.

At a meeting of the city council held on Feb. 2nd it was reported that the death-rate (24.2 per 1000) was rather higher than usual, due almost exclusively to a bad epidemic of measles. There were 145 deaths from zymotic diseases, 106 from pulmonary consumption, and 218 from diseases of the respiratory organs. In the corresponding period of last year the death-rate was from all causes 20·12.

Action against a Medical Man: Alleged Neglect.

At Bandon quarter sessions, before County-court Judge Bird, the remitted action brought by Patrick Byrne, labourer, of Innishannon, against Dr. John Reid was heard. The plaintiff sought to recover damages on the grounds that the defendant had treated him negligently and had not exhibited sufficient medical and surgical skill. The plaintiff suffered from fracture of two or three ribs and dislocation of the collar-bone, the result of a fall into a quarry. He sent for the late Mr. Alcock who was the dispensary medical officer of the district, but as Mr. Alcock was absent on leave Dr. Reid attended as his substitute. The plaintiff in his evidence alleged that Dr. Reid had promised to call on the following day and had not done so; the bandages had loosened and he suffered great pain. He stated that he still suffered from pain in the arm and that he could not work as well as previously. Dr. Reid gave evidence to the effect that he had adopted the usual methods for treating injuries of the kind and impressed emphatically on the plaintiff that he had sustained an injury which could not be completely cured and that he should not afterwards blame him (the defendant) for the result. Professor C. Y. Pearson of Cork stated that the result of the treatment of this class of injury was scarcely ever successful; the muscles of the upper part of the plaintiff's arm were well nourished, from which he concluded that he had been using it pretty freely. Dr. J. Cotter of Cork gave similar evidence and the judge having summed up, the jury, after deliberating for about 40 minutes, brought in a verdict for the defendant. Judgment was accordingly marked for the defendant with costs.

Chloral Hydrate Poisoning: Important Observations by the Coroner.

Mr. Coroner Murphy held an inquest at Cork recently regarding the death of a commercial traveller. It appeared from the evidence that the deceased had been drinking recently and had been in the habit of taking chloral. His wife went to Cork to nurse him and on calling him in the morning got no answer, and it was then found that he was breathing his last. A medical man who was called in stated that death was due to the action of chloral hydrate on a weak heart. The coroner commented on the fact that the deceased had obtained the prescription for the chloral hydrate as far back as one and a half years ago and that it had been compounded several times since by druggists in various parts of Ireland. He said that the druggists must have known that the drug was a dangerous one and he considered it a great shame that they should have gone on supplying a medicine of the kind without insisting on the necessity for the deceased to procure more recent medical advice as to the suitability of the drug for the treatment of his case.

Feb. 3rd.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Overcrowding of the Medical Profession and Compulsory Military Service.

THE constant increase in the number of medical men in France, which makes the future of medical men appear very gloomy, has given rise to much thought and many are the reasons assigned for this increase. One reason which is very commonly mentioned is the law concerning military service which makes it compulsory upon every French male who has attained the age of 21 years to make out three years' military service. There are, however, certain persons exempted from serving three years and such persons are excused with one year's service. Among them are young men who are entering the liberal professions, it being considered by the law that to take three

years from a young man's course of study would seriously prejudice his future and would diminish the cultivated portion of society. Two of the professions thus dispensed are medicine and civil law, and accordingly there is a rush into these two professions of young men who do not want to serve three years as a soldier. The profession more sought after of the two is medicine, it being thought that a medical man can begin to make money for himself sooner than a lawyer can and also that the latter profession is more risky than the former. So marked appears to be the relation between the overcrowding of the medical profession and the one year's military service that medical men are giving vent to the wish that for the future medical students shall not be dispensed from the three years' service. Dr. Brouardel, who has just brought out a very interesting book dealing with the medical profession at the commencement of the twentieth century, argues that the military question has nothing to do with the overcrowding of the medical profession, for the situation in France is paralleled by that seen in other countries where the regulations as to military service are different. In Germany, for instance, last year 1350 men received medical diplomas, as against 800 ten years ago. Dr. Brouardel considers that social matters have most to do with the increase in the numbers of medical men. Science is becoming more appreciated by the public, newspapers give greater prominence to scientific communications, such as questions of hygiene, and even to new drugs or methods of treatment, while nearly every journal is interested in health and thinks itself capable of discussing medical subjects. In addition, the medical man of to-day goes much more into general society than in former days. Dr. Brouardel considers that the tendency of the middle classes to enter the medical profession is a necessary evil due to present-day social conditions and that the suppression of the right to be excused military service would not aid matters in the least. If the reasoning of Dr. Brouardel should bring about the imposition of three years' military service on medical students, and so should interrupt their studies to the great detriment of their education as medical men, it will be very hard if the medical profession is allowed no compensating advantages for such sacrifices.

The Alcohol Question.

The struggle against alcoholism in France is entering upon an acute stage. To the surprise of everyone M. Duclaux, director of the Pasteur Institute, is heading a movement against teetotalism. In interviews which have appeared in the public press and in pamphlets, &c., the expense of the circulation of which has been defrayed by the syndicate of wine and spirit merchants, M. Duclaux has declared his view that alcohol is a most useful alimentary substance. In so saying he has not relied upon any recent personal investigations, but has adopted the conclusions of two American authors and has not taken into account the repeated and identical experiences of other observers. For it has been often demonstrated that if two groups of workmen in the same circumstances attack the same task, one relying upon water and the other employing alcohol, the advantage gained by the latter will only be temporary, alcohol serving to bring energy into play but not being able to create it. M. Duclaux's statement as to the value of alcohol has, as might have been easy to foresee, been immediately seized upon and exploited for the good of the liquor trade, all engaged in which are now advertising their wares to the public as being "*aliment indispensable pour la santé.*" M. Duclaux's attitude is a reasonable one. He cannot deny the value of alcohol, and relies upon the growth of popular education to prevent the abuse of its employment. All the temperance societies—bodies which have in France a task of enormous significance, inasmuch as the country has the greatest consumption of alcohol per head—are, however, much excited by M. Duclaux's action and its results. The Council of the Assistance Publique, several members of which recently formed a committee of inquiry into the practical methods for the prevention of tuberculosis, has decided to placard Paris with the conclusions to which that committee came, inasmuch as they constituted mainly a warning against the dangers of alcoholism. The Prefect of the Seine and the Director of the Assistance Publique, who would be responsible for such placards, have been threatened by the syndicate of wine and spirit merchants with legal process, so that the situation is an acute one. Other circumstances are rendering it more so. Parliament will shortly be called upon to consider the position of the *bouilleurs de cru* whose privileges of distilling personally the products of their own industry are responsible for so much of the unrestrained drunkenness of France. The liquor trade are preparing to support their side with energy and money, so that M. Duclaux's excursion into the question at the present juncture is being made the subject of diverse comment by his colleagues.

Feb. 2nd.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Berlin Medical Society.

THE election of officers of the Berlin Medical Society took place on Jan. 14th as appointed by the by-laws. Hitherto it has been a practically invariable rule to re-elect the retiring officers every year till they either resigned or died and therefore there have hardly ever been any debatable questions raised as a prelude to the elections which have, in fact, become little more than a formality. This year, however, some animation was imparted to the proceedings, because the death of Professor Virchow, who had filled the office of president for many years, had left a vacancy for which two candidates were put forward by different combinations of members. The two candidates were the first vice-president, Professor von Bergmann, who had acted as president since the time of the accident to Professor Virchow, and Professor Waldeyer, whom the committee of the society had chosen as vice-president in the same circumstances. Some of the medical papers discussed the various aspects of the matter and meetings of members were even held for that purpose, as on the occasion of a contested Parliamentary election. The principal argument against Professor Waldeyer was that he, together with other members of the faculty, had signed a petition to the medical chamber praying for exemption from the payment of dues to the chamber. In this petition it was said that members of the university engaged in scientific research or in the teaching of subjects not included in the practical classes of the medical curriculum were not concerned with questions bearing on the interests of medical practice and that their position differed entirely from that of the medical practitioners. This petition at the time caused some indignation, because the petitioners were understood to assert that no connexion existed between the representatives of the theoretical and practical branches of medicine and the feeling of resentment thereby aroused was sufficient to deter the majority of the Medical Society (a society consisting for the greater part of medical practitioners) from voting for Professor Waldeyer. He only obtained 88 out of 386 votes, the great majority voting for the acting president, Professor von Bergmann, although his (Professor von Bergmann's) rulings in connexion with the discussions had often astonished the society. The other members of the committee were re-elected.—At the same meeting Dr. Katz read a paper on the Prevention of Tuberculosis. He said that the results of sanatorium treatment were not so successful as was alleged; many patients who had apparently been cured became tuberculous once more and found themselves unable to work very soon after returning to their homes. The alleged cure lasted only during the stay of the patient in the sanatorium. More radical measures must be tried. The modern systems for sanatoriums entirely neglected the influence of climate; it was now an accepted opinion that sanatoriums might be situated anywhere. This opinion, however, was erroneous. It was known that in certain climates tuberculous patients benefited a good deal and he proposed to make the utmost use of this curative agent. The climate of South Africa was specially suitable for this class of patients and as Germany possessed great territories there it should be considered whether colonies of tuberculous patients could not be formed in those countries. He had already discussed the matter before the German Colonial Society and his proposal had been met with sympathy from leading colonial men.—In the discussion Professor Senator declared that although the proposals of Dr. Katz to settle tuberculous patients in such distant places as South Africa were scarcely realisable owing to the expense, yet he agreed with Dr. Katz's criticisms as to the success of the treatment in sanatoriums.—Professor Fränkel explained that the alleged good results were partially due to the system followed in the selection of cases which, as a rule, was made in accordance with the results of a tuberculin test; every patient in whom the

tuberculin test gave a positive reaction was regarded as tuberculous, even if he had scarcely any other symptom of the disease. This class of patients, of course, recovered and in that way improved the statistical results. He had, moreover, found that the tuberculin test reacted positively in patients suffering from rheumatism, gastric troubles, and other conditions where not the least suspicion of tuberculosis existed. This test, he said, did not prove anything as to the presence of tuberculosis, and he believed that many of the patients in sanatoriums were not tuberculous at all.

Professor von Esmarch's Birthday.

The eightieth birthday of Professor von Esmarch was celebrated on Jan. 9th at Kiel. The former assistants of the celebrated surgeon, the German Surgical Association, the First Aid Society, the University of Kiel, the city of Kiel, and many other public bodies sent representatives, who called in the morning at Professor von Esmarch's residence to congratulate him. Many honours have been conferred on Professor von Esmarch, among others the freedom of the city of Kiel. Special numbers were issued by the *Archiv für Chirurgie* and the *Zeitschrift für Chirurgie* and a special work was published dealing with surgical questions and edited by Professor von Esmarch's present and former assistants. The Samaritan Association has founded an "Esmarch medal," which will be awarded by the association to persons of special merit in the first-aid and accident service. The banquet in the evening was attended by Prince Henry of Prussia, who proposed the health of Professor von Esmarch, the representatives of the various associations, and the leading men of the university and city of Kiel.

Death of Professor Saenger.

Professor Max Saenger of Prague, who died there on Jan. 12th, was a German by birth and until three years ago, when he went to live in Austria, he had always held appointments in Germany. He was born in 1853 at Bayreuth, and after the completion of his medical curriculum at Würzburg and Leipsic he become qualified in 1876. He was soon appointed an assistant in the pathological institute of Leipsic under the late Professor Wagner and also an assistant in the medical polyclinic. In 1878 he began work in gynæcology as an assistant to the late Professor Crédé; in 1881 he was recognised as *privat-docent* and in 1890 he was appointed extraordinary professor. In 1897 he was at the head of a private clinic for diseases of women where he held classes which were well attended especially for post-graduate study. In 1899 he left Germany on being appointed ordinary professor at Prague. Professor Saenger's work was directed to many questions in gynæcology, both practical and theoretical. His researches on deciduoma malignum, on Cæsarean section, and on disinfection are of considerable value.

Feb. 2nd.

ROME.

(FROM OUR OWN CORRESPONDENT.)

A Case of Inverted Viscera.

WHILE endeavouring to localise the position of a revolver bullet by means of the Roentgen rays in a case of attempted suicide a few days ago Professor Casati of Ferrara discovered that his patient was the subject of inversion of the viscera. The revolver had been discharged in such a direction that the bullet had entered the left side of the front of the chest at the level of the third rib and had passed downwards and outwards to lodge among the muscles in the left post-axillary line. Fortunately for the patient the bullet had apparently been diverted by the rib and it is doubtful whether it actually entered the thoracic cavity. Had it done so the result in ordinary circumstances must have been fatal. It was found, however, that the heart was on the right side, some distance away from the line of fire, the liver occupying the left hypochondrium with the stomach lying to its right. Such a disposition of the internal organs is sufficiently rare, but that anyone should owe his life to the abnormality is probably unique.

Small-pox in Malta.

The Prefect of Syracuse has put in force in that port the provisions of the Maritime Sanitary Law against ships coming from Malta on account of an outbreak of small-pox in the island.

The Supposed Discovery of the Germ of Rabies.

From a second communication made to the Medical Academy of Pavia it appears that Professor Sormani cannot yet claim to have proved his thesis that the coccus discovered by him is the causal organism of rabies, since the animals inoculated with cultures of the microbe did not die from the disease nor was it possible to identify in them its characteristic anatomical lesions. He contends that his microbe differs from that described by his assistant Dr. Levy who also claims the discovery. The Academy has appointed a special commission to watch the experiments and to report the result.

The Health of Palermo.

Alarming reports having reached Rome of a severe epidemic of typhoid fever said to be raging in Palermo I have made inquiries of trustworthy persons residing there regarding their truth. The result is reassuring, for it appears that although before the October rains fell an outbreak of fever did occur it very soon died out, and that the town at the present time is in a particularly healthy state, being free even from influenza, which has been prevalent in many of the northern cities of Italy during the past few weeks.

Jan. 31st.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

The Isthmian Canal Commission.

Professor William H. Welch of Baltimore drew up and presented at the recent meeting of the American Association for the Advancement of Science the following motion which was adopted by that body:—

Inasmuch as the construction of the Isthmian Canal is through a region in which without energetic sanitary control there is sure to be an enormous loss of human life from preventable diseases, particularly from pernicious malaria and yellow fever, as well as great waste of energy and of money from disabilities caused by such diseases, and inasmuch as the measures for the restraint of these diseases, which have already achieved even their partial extermination in Cuba under American administration, require expert knowledge based upon practical familiarity with tropical diseases, experience in the application of these measures, and large authority in their administration: Resolved, that the American Association for the Advancement of Science begs most respectfully and earnestly to call to the attention of the President of the United States the importance of appointing as a member of the Isthmian Canal Commission a medical man possessed of the qualifications indicated. The association is convinced that the mere employment of such a sanitary expert by the commission will not be likely to secure the desired result.

The construction of the Isthmian Canal will undoubtedly be attended with much loss of life and sickness. The country through which the canal will pass is notoriously unhealthy, so that it will be necessary that a medical sanitary expert shall hold a position of authority over the workers. There will also be a great opportunity to put to the test on a large scale the value of the discoveries relating to the conveyance of malaria and yellow fever by mosquitoes. It is thought that in order to exercise the needed authority the sanitarian should himself be a member of the commission. The American medical journals have taken the matter up with the view of influencing the President to favour this plan. —The New York Academy of Medicine has petitioned the Government to appoint as a member of the Isthmian Canal Commission a medical man of proper qualifications to advise on all matters of a sanitary character. The petition states that it is well known that the previous excavations for an Isthmian canal have been at ended with a large amount of illness and a heavy mortality due mainly to malaria and yellow fever, but recent discoveries as to the causes of these diseases have enabled medical officers to control their ravages to a marked degree. The success which has crowned medical efforts in Cuba in apparently abolishing yellow fever is another evidence for the belief that if proper hygienic precautions are taken at Panama and other situations along the route of the canal the death-rate of the past can be greatly decreased or made to disappear. The Academy of Medicine believes that the amplest powers should be given to the medical officers in charge of the sanitation of the canal and that to attain this end a medical officer should be a member of the commission which the President of the United States is authorised to appoint to conduct the affairs of the proposed canal.

Formalin in Septicæmia.

Much interest has been manifested recently in New York in some experiments made with formalin used as an antitoxic agent in septicæmia. Dr. Charles C. Barrows of New York, the assistant of Dr. Polk in the obstetrical ward of Bellevue Hospital, had under his charge on Dec. 25th, 1902, a negro woman who had given birth to a child eight days before. She had a temperature of 104·3° F. when admitted and 24 hours after the temperature had risen to 107°. The blood examined bacteriologically showed the presence of streptococci and it was undoubtedly a typical case of puerperal fever. The patient, of course, was in an extremely critical position and Dr. Barrows asked for permission to inject formalin solution. This request being granted an intravenous injection of 500 cubic centimetres of 1 in 5000 of formalin was made into the right arm of the woman with the effect that by the next day the temperature had fallen to 101°. On the second and third day after the injection the temperature began to rise again, and on the third day it had reached 103°, when a formalin solution of the same strength was again injected, the quantity being increased to 750 cubic centimetres. The temperature has been normal ever since and the patient is to all appearances practically well. Many examinations of this woman's blood have been made since the second administration of formalin but no streptococci have been found. Formalin solution, since Dr. Barrow's use of it, has been administered for septicæmia following child-birth in three other instances in New York hospitals. In one case it is said to have been successful but in the other two cases the results were not satisfactory. In the discussion which followed the reading of a paper by Dr. Barrows before the New York County Medical Society on Jan. 19th, in which he recounted the history of the patient treated by him with formalin solution at Bellevue Hospital, the view generally taken was that great hopes should not be entertained of the ultimate success of the method. Dr. J. W. Williams of Johns Hopkins Hospital probably expressed the opinion of those present when he said, "This will prove a very great boon to suffering women if it can be substantiated, but I regard it with reserve." Reference was made at the meeting by Dr. Barrows to the tests with formalin made by Dr. Maguire of London who has experimented on animals and on himself.

Bubonic Plague in San Francisco.

There has been much uneasiness in the public mind over the repeated reports of the existence of the oriental plague in San Francisco. The local authorities have constantly denied the truth of these reports and still they have been repeated and in several instances by expert medical examiners. Finally, the matter has reached such an acute stage that the surgeon-general of the Public Health and Marine Hospital Service Department, acting under powers recently conferred upon that service, called a conference of State health boards to meet in Washington. The conference met on Jan. 19th and the surgeon-general laid before the members the following communication from one of the inspectors of the Department who had been sent to San Francisco to examine the situation: "87 cases have occurred in Chinatown, six sickened in other parts of the city; none proved to have originated in the country. Total, six whites, four Japanese, and 83 Chinese since March, 1900." The inspector also reported that of 22 dead rats found in Chinatown 11 were discovered to have been infected; of 354 rats caught alive four proved to have been infected. With these facts before the conference the following declaration was unanimously agreed upon: "The present danger to California and to the United States lies primarily in the persistence during three years of a definite nidus of plague infection in that part of San Francisco known as Chinatown, but the gravity of this circumstance is greatly increased by the gross neglect of official duty by the State Board of Health of California and the obstructive influence of the recent Governor of California, by the failure of the city government of San Francisco to support its city board of health, and by the obstacles opposed to the operations of the United States Public Health Service. The conference will consider the safety of the country sufficiently assured as soon as satisfied that a competent city board of health of San Francisco and a competent State board of health, in coöperation with the United States Public Health Service, will proceed under definite, harmonious, and effective laws and ordinances, that they are provided with ample funds and that they are jointly and severally in the free exercise of their lawful powers." The conference also declared its belief that the habitual publication of the actual facts relative to infectious diseases and their prevention is one of the best means to minimise the dangers of an epidemic.

Jan. 29th.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

Dental Defence Association.

AT a meeting recently held in Sydney, attended by about 100 dentists and presided over by Sir James Graham, it was unanimously decided that—

It is desirable to form a dental defence association, having for its objects: To render assistance to any member who may be threatened with, or involved in, any action at law or prosecution arising out of the practice of his profession within this State; to assist in any movement which will promote fraternity amongst the members or elevate and improve the social and legal status of dentists; promotion of the welfare of the dental profession of New South Wales.

A committee was appointed to draw up a scheme for the formation of the association.

Sydney Medical School.

At its last meeting the senate of the Sydney University adopted a report from the Faculty of Medicine recommending an amended medical curriculum. In it the work of the present first year is somewhat curtailed, while human anatomy and practical histology (microscopical anatomy) are introduced at the end of the first year instead of the second year as at present. The other changes, with two exceptions, consist in moving the subjects generally to an earlier place in the curriculum so as to allow more time in the fifth year for hospital and clinical work. Materia medica as a single separate course is omitted, while special courses upon pharmacology or the physiological action of drugs, special therapeutics and posology and prescription writing have been established. In the fifth year students will be required to select two subjects from the following: diseases of children, diseases of the skin, diseases of the ear, nose, and throat, special bacteriology, and special therapeutics. In lieu of the present five annual examinations there will be in future only three, marking the completion of the preliminary scientific, the medical scientific, and the applied medical work respectively. There will also be two term examinations—one in organic chemistry in the second year and one in general pathology in the third year. At the same meeting a letter was read from Dr. Thomas Fiaschi offering to deliver a voluntary course of lectures on the history of medicine to medical students. It was resolved that the offer should be accepted and that Dr. Fiaschi should be cordially thanked. The following examiners were appointed: anatomy, Dr. A. E. Mills; physiology, Professor E. C. Stirling, C.M.G.; pathology, Dr. Sydney Jamieson; materia medica, Dr. A. Watson Munro; medicine, Dr. J. Macdonald Gill; surgery, Mr. G. T. Hankins; midwifery, Dr. S. H. MacCulloch; gynæcology, Dr. Fourness Barrington; clinical medicine, Dr. P. Sydney Jones; clinical surgery, Dr. Fiaschi; psychological medicine, Dr. Eric Sinclair; ophthalmic medicine and surgery, Dr. Odillo Maher; and medical jurisprudence and public health, Dr. W. G. Armstrong.

Balmain Hospital, Sydney.

Some friction has occurred at the Balmain Hospital, Sydney, between the paid and honorary staff. Two of the honorary surgeons have resigned. One of the trustees is stated to have asserted that the paid medical officer neglected his work of attending to out-patients while attending to operations for which he received a fee. The matter is to be dealt with by the rules committee during the month.

Institution for the Treatment of Alcoholism, &c.

The Central Methodist Mission in Sydney has established an institution at Tempe for the treatment of alcoholism, narcotism, and neurasthenia. The "Medical Retreat," as it is termed, was formally opened by the Premier on Nov. 17th. The President, in welcoming the Premier, said the institution was not an inebriates' home but a medical institution conducted on scientific lines. They undertook to kill the desire for alcohol and to help to restore

will power. The British Medical Association was aware of the formulæ and the treatment, and most of their patients were sent by medical men.

Prevention of Lead Poisoning in Mines.

Regulations for the prevention of lead poisoning in mines have been published in the *New South Wales Government Gazette*. The principal points are as follows. A record is to be kept by the manager of a mine of cases of lead poisoning and transmitted every month to the Chief Inspector of Mines. An ample supply of good drinking-water is to be kept at every mine, properly protected, so as to prevent contamination by dust. Standpipes and hose are to be provided to lay dust by sprinkling. Every person employed in a mine must wash his hands before meals. At every mine or works where lead or lead compounds are mined or manufactured bath-houses and changing-rooms are to be supplied. The baths are to include both shower and plunge tanks. Adequate provision is to be made to prevent as far as practicable the emission of flue-dust from smelter stacks. Workmen employed to cleanse the flues must wear a respirator over the nose and mouth. If any person shall refuse or neglect to comply with any such regulation he shall be liable to a penalty not exceeding £20, and to a further penalty not exceeding £5 for every day during which the offence is continued.

Obituary.

Dr. Archibald Megginson, late of Pott's Point, Sydney, died on Nov. 16th. He was born in Scarborough and was 47 years old. He arrived in Perth, Western Australia, about 25 years ago and held the position of medical officer to the gaols. Resigning this post he came to New South Wales, and after practising for a time at Merriwa settled in Sydney, where he had an extensive practice.—Dr. J. J. Miller of Brunswick, Victoria, died suddenly on Nov. 26th from septic poisoning. He was a native of Melbourne and a graduate of the Melbourne University. Besides a general practice in Brunswick he also conducted a special practice as an ophthalmic surgeon in Melbourne. He had an extensive connexion with the local friendly societies and was a great favourite in his district. He was a surgeon in the militia and was buried with military honours. Great sympathy is felt for his widow, whose brother, Dr. Doolan of Tass, New South Wales, died suddenly a little time ago from appendicitis.

Dec. 25th, 1902.

Obituary.

ALEXANDER THOMSON, M.D., L.F.P.S. GLASG.

WE have to announce the death of Dr. Alexander Thomson of Dumfries on Jan. 18th at the age of 70 years. An attack of influenza a few weeks ago had apparently been recovered from and he was actively engaged in professional work when he caught a chill on the 14th which was followed by an acute pleurisy ending fatally after an illness of three days. Dr. Thomson was a native of Shotts in Lanarkshire and studied medicine at Glasgow University. After a distinguished career as a student he was appointed house surgeon to the Glasgow Royal Infirmary. He was also house surgeon to the Lock Hospital there and President of the Glasgow University Medical Society. In 1861 he went to Dumfries where he rapidly built up a large practice. Appointed visiting physician to the Dumfries and Galloway Royal Infirmary in 1872, he resigned after two years when a vacancy occurred on the surgical staff, and to this he was appointed and continued to fill the post till two years ago. The directors received his resignation with regret and appointed him consulting surgeon to the hospital.

For many years Dr. Thomson has been recognised as the leading surgeon in the south of Scotland. He was perhaps the first country surgeon in Scotland to operate on ovarian tumours, having successfully removed one in February, 1865. As President of the Border Counties Branch of the British Medical Association in 1888, he delivered an interesting address on ovariotomy. For the long period of 33 years Dr. Thomson acted as medical officer of health of the burgh of Dumfries, besides holding many other important public offices. By his death his medical brethren in Dumfries and a large part of the south of Scotland have lost a friend and sagacious counsellor on whom they could always rely. His great experience, sound judgment, and dexterity in operating made him trusted by patients and colleagues alike. Both in hospital and private practice the loss of his always highly valued opinion will be felt for a long time to come. Dr. Thomson leaves a widow and two daughters to mourn their loss.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. M. Lavdoffski, Professor of Histology and Embryology in the Medico-Chirurgical Military Academy in St. Petersburg.—Dr. Gessner, Professor of Midwifery in Erlangen, quite suddenly, at the age of 38 years.

Medical News.

UNIVERSITY OF CAMBRIDGE.—At the Congregation on Jan. 29th the following medical degrees were conferred:—

M.D.—A. M. Ware, Pembroke.
M.B.—G. R. Wilson, Trinity; and E. S. Scott, Pembroke.
B.C.—W. M. Strong, Trinity; E. S. Scott, Pembroke; H. C. Williams, Pembroke; R. Butterworth, Christ's; E. T. Harris, Christ's; and W. W. Holtzmann, Christ's.

A grace was carried at the same Congregation for the appointment of two additional Demonstrators of Anatomy.—Dr. L. E. Shore, St. John's, has been appointed a University Governor of Hartley University College, Southampton.—By the death of Dr. Ferrers, F.R.S., on Jan. 31st and of Sir G. G. Stokes, F.R.S., on Feb. 1st, the University loses two of its most distinguished heads.

FOREIGN UNIVERSITY INTELLIGENCE.—*Cracow:* Dr. J. Raczynski, *privat-docent* of children's diseases, has been promoted to an extraordinary professorship. Dr. Majewski has been recognised as *privat-docent* of Ophthalmology.—*Gratz:* Dr. Fritz Harmann has been recognised as *privat-docent* of Psychiatry. Professor Von Hacker of Innsbruck has been offered the chair of Surgery in succession to the late Professor Nicoladoni.—*Leipsic:* Dr. Franz B. Hofmann, *privat-docent* of Physiology, and Dr. Perthes, *privat-docent* of Surgery, have been promoted to extraordinary professorships.—*Odessa:* Dr. Zabaneieff has been recognised as *privat-docent* of Surgery.—*Würzburg:* Dr. Karl Marbe, *privat-docent* of Experimental Psychology, has been promoted to an extraordinary professorship.

THE AFTER-CARE ASSOCIATION.—The annual meeting of the After-Care Association will be held on March 4th under the presidency of Sir William S. Church, Bart., K.C.B., President of the Royal College of Physicians of London. The association, which renders aid to poor persons discharged as recovered from asylums for the insane, is the only charity of its kind in the United Kingdom and is deserving of more financial support than it has hitherto obtained. Subscribers of not less than 5*s.* per annum and persons who give a donation of not less than £2 10*s.* are entitled to membership of the association, but larger annual subscriptions and donations are greatly needed. The address of the secretary is Church House, Dean's-yard, Westminster, London, S.W.

MANCHESTER MEDICO-ETHICAL ASSOCIATION.—From the fifty-fifth annual report of this association we find that during the past year papers have been written on the following subjects:—The Advantages of a Daily Medical Inspection of Schools, by Dr. A. W. W. Lea, a system that was heartily approved of by the association in the interests of public health. "Professional Ethics and the Scope of the Medico-Ethical Association" was the title of a paper read by Mr. F. H. Westmacott, in which he pointed out that many of the advantages accruing to the profession generally were due to the efforts of this association in the earlier years of its history. The following office-bearers were elected for the year 1903:—President: Dr. D. Lloyd Roberts. Vice-Presidents: Dr. C. Macfie, Dr. W. Thorburn, Dr. J. W. Hamill, and Dr. J. C. Eames. Honorary treasurer: Dr. J. Ferguson. Honorary secretaries: Mr. Westmacott and Mr. S. Bagley. Committee: Mr. C. R. O. Garrard,

Dr. J. J. Cox, Dr. W. E. Sawers Scott, Dr. E. Vipont Brown, Dr. A. Stewart, Mr. D. Owen, Dr. T. Harris, Mr. T. W. H. Garstang, Dr. A. B. Ritchie, and Dr. G. H. Lancashire. Auditors: Dr. E. Annacker and Dr. J. G. Clegg.

PRESENTATION TO A MEDICAL PRACTITIONER.—On Jan. 20th, at Launceston, the members of a ladies' nursing class in connexion with the St. John Ambulance Association presented Mr. William Fookes Thompson, M.D., C.M. Edin., with a travelling-bag as a mark of appreciation of his services as honorary lecturer.

BRISTOL NATURALISTS' SOCIETY.—The fortieth annual meeting of this society was held at University College, Bristol, on Jan. 22nd, when Dr. A. B. Prowse gave an interesting lecture on the Wansdyke in the neighbourhood of Bristol. Dr. Prowse was elected president for 1903, and Mr. A. E. Hudd, F.S.A., and Mr. C. K. Rudge, M.R.C.S.Eng., were elected vice-presidents.

THE LADIES' PUBLIC HEALTH SOCIETY, MANCHESTER.—One of the most useful agencies in promoting the public health of the poor districts of Manchester is that of the Ladies' Public Health Society. Its work is done quietly and unostentatiously in union with the Manchester and Salford Sanitary Association and under the supervision of the medical officers of Manchester and Salford. At the annual meeting, held on Jan. 20th under the presidency of the Lord Mayor, much interesting information was given in the report, the forty-second of the series, as to the work of the society and the condition and habits of the poor of the districts covered by its operations. The abnormally high death-rate among infants had led to the giving of special work to some of the society's visitors by the Manchester and Salford medical officers of health. The visitors, in the ordinary course of their duty, inquire into the feeding, clothing, and surroundings of the babies and explain to the mothers where mistakes have been made and how to remedy them. They also give instruction as to the importance of cleaning floors, burning refuse, washing clothes, and the bearing of hygienic measures on the arrest or cure of consumption. The health women, as they are sometimes called, live in their districts and visit from house to house in the localities as the lady superintendents direct. They carry carbolic powder, explain its use, and leave it where it is accepted. They also sell soap, explain the evils of bad smells, dirt, and want of fresh air, and give hints to the mothers as to feeding and clothing the children. They write daily reports of the work done and mention the sanitary condition of the houses visited. Mothers' meetings are held at which simple talks are given as to health and sanitation. This sketch of the work shows that the "visitors," though women of the working-class, must be possessed of a good deal of intelligence and of some education, for the work requires much tact and discretion and is not over well paid for at 16s. a week. The committee feels this and wishes to increase the wage, but the income of the society, as is too often the case, does not equal the expenditure and so a strong appeal is made for an increase of subscriptions. Last year they amounted, with donations, to £362, and the year's working left a deficit of £23. As the Lord Mayor said, the income ought to be quadrupled in a city like Manchester. "The society rendered much valuable help to the sanitary committee of the corporation, whose difficulties were often almost insuperable owing to the fact that the removal of insanitary property inflicted great hardships on the poor." As a rule the visitors are well received, their suggestions and help being gladly accepted, and the suspicion and jealousy common enough years ago have gradually disappeared now that their motive is known—that they have come to help and not merely to spy out the barrenness of the land. The lowest death-rate in the districts worked by the society is 25·1 in the St. George's North, the highest 50·9 in Angel Meadow, while in Ancoats West it is 42·0. The past year was one of many calls on the charitable, but it is to be hoped that the appeal made for more help will meet with a generous response as there is much ground yet untouched for want of means. In supporting a vote of thanks to the Lord Mayor Dr. J. M. Rhodes mentioned a few things not flattering to our insular vanity but which it is well we should now and then hear. He said we were too pharisaical as to infant mortality. In France it was only 1 per cent. greater than in England and even in Italy only 1½ per cent. higher. In England and Wales 154 per 1000 die within the first 12 months. And in Denmark, instead of being 15 or 16, the death-rate was under 10 per 1000. There is no likelihood of our attaining to sanitary perfection for some time to come and the fight against disease must be waged with dogged persistence.

AT the recent Seaton (Devon) urban district council bye-election Mr. G. E. A. Evans, L.R.C.P. Lond., M.R.C.S. Eng., was returned by a considerable majority.

DONATIONS AND BEQUESTS.—Under the will of Miss Elizabeth Turner the Derbyshire Royal Infirmary and the Derby Children's Hospital receive £300 each.

MEDICAL MAGISTRATE.—Mr. Ralph C. Bartlett, M.R.C.S. Eng., L.R.C.P. Lond., has been appointed a justice of the peace for the borough of Romsey, Hants.

WESTERN DISPENSARY, BATH.—The annual meeting of the subscribers of this institution was held on Jan. 26th under the presidency of the mayor. The medical report stated that during the year 807 patients were treated, including 400 who were visited at their own homes. The financial statement was satisfactory and showed a favourable balance of £142.

DEATH OF A CENTENARIAN.—Mrs. Elizabeth Alsop, of Gosden, near Guildford, has died at the age of 102 years, having been born on Nov. 13th, 1800, in Swallow-street, London. For upwards of 70 years she was with the late Lady Audrey Ridsdale and family and was awarded the prize offered by the late Duchess of Teck for the longest record of service with any one family.

ROYAL INSTITUTION.—The Friday evening discourse at the Royal Institution on Jan. 30th was delivered by Professor W. E. Dalby, the subject being Vibration Problems in Engineering Science. Illustrations were taken chiefly from locomotive engines on railways and from the engines of steamships. Many fine models of machinery in motion were shown.—A general monthly meeting of the members of the Royal Institution was held on Feb. 2nd, Sir James Crichton Browne, treasurer and vice-president, being in the chair. The following were elected members: Dr. Louisa Garrett Anderson, Dr. Henry T. Böttinger, Mr. W. Child, Mrs. Ionides, Miss Lea-Smith, Sir Frederick Treves, Bart., and Mr. W. Whitehead.

NATIONAL DENTAL HOSPITAL.—The annual general meeting of the governors and supporters of the above institution was held at the hospital on Jan. 27th, Mr. F. Cavendish Bentinck presiding. Among those present were Mr. Alfred Farquhar, the treasurer; Captain Maxwell Earle, D.S.O., Mr. W. Ward Cook, Mr. F. Canton, Mr. Alfred Smith, Mr. Charles W. Glassington, and Mr. Sidney Spokes, Dean of the College. The committee reported an increase over the total of last year in the number of patients treated of 2682, as well as a consequent general addition to the amount of the various kinds of work performed. It also had the gratification of stating that the new regulations which came into force on Oct. 1st were working satisfactorily and promised a still greater improvement in the future. The committee regretted to have to call attention to the deficit, as shown on the balance sheet, of £863, of which debt £296 were incurred in 1901 and £566 in 1902, and ventured to observe that it was not possible to execute such a largely increased amount of work without additional expense. The committee begged all supporters of the hospital to use their best endeavours to obtain further subscribers in aid of the work, the number of annual subscriptions being quite disproportionate to the growing requirements of the institution and the committee being very anxious that the work should not have to be curtailed in consequence of deficient income.

BOOKS, ETC., RECEIVED.

DAVIS, F. A., COMPANY, 1914-16, Cherry-street, Philadelphia.

Book on the Physician Himself, and Things that Concern his Reputation and Success. By D. W. Cathell, M.D. The Twentieth Century Edition, being the eleventh edition revised and enlarged by the Author and his Son, William T. Cathell, A.M., M.D., Baltimore, Maryland. Price $2.50 net, delivered.

Surgical Anatomy and Operative Surgery. For Students and

Practitioners. By John J. McGrath, M.D., Professor of Surgical Anatomy and Operative Surgery at the New York Post-Graduate Medical School. Price $4 00 net.

FISCHER, GUSTAV, Jena.

Anatomie des Nervensystems. Bearbeitet von Prof. Dr. Ziehen in Utrecht und Prof. Dr. Zander in Königsberg i. Pr. Zweite Lieferung: Makroskopische und mikroskopische Anatomie des Gehirns. Von Professor Dr. Th. Ziehen in Utrecht. Price M. 6. (Lieferung 10 des "Handbuch der Anatomie des Menschen," herausgegeben von Prof. Dr. Karl von Bardeleben).

Klinisches Jahrbuch. Unter Mitwirkung der Herren Prof. Dr. M. Kirchner, Geh. Ober-Med.-Rat, und Dr. Naumann, Geh. Ob.-Reg.-Rat. Herausgegeben von Prof. Dr. Freih. v. Kiselberg, in Wien, Prof. Dr. Flügge, Geh. Med.-Rat in Breslau, Prof. Dr. Freih. von Mering in Halle a. S., und Prof. Dr. Werth, Geh. Med.-Rat in Kiel. Zehnter Band. Zweites Heft. Price to subscribers, M. 5; to non-subscribers, M. 6.

HADDEN, BEST, AND CO., 5, West Harding-street, and 26, Fetter-lane, E.C.

An Analysis of the Education Act, 1902. Compiled by Hartley B. N. Mothersole, M.A., LL.M., of Trinity College, Cambridge, and the Inner Temple and South-eastern Circuit, Barrister-at-Law. Price 6d. net.

HARRISON AND SONS, 45, St. Martin's-lane, W.C.

International Catalogue of Scientific Literature. First Annual Issue. R. Bacteriology. Vol. VIII., 1902 (December). M.S. completed May, 1902. Price 21s.

HIRSCHWALD, AUGUST, Unter den Linden, 68, Berlin, N.W.

Sammlung Klinischer Abhandlungen über Pathologie und Therapie der Stoffwechsel-und Ernährungsstörungen. Herausgegeben von Prof. Dr. Carl von Noorden, Oberarzt des Städtischen Krankenhauses in Frankfurt a. M. 3. Heft. Ueber die Schleimkolik des Darms (Colica Mucosa) und ihre Behandlung. Von prof. Carl von Noorden und Dr. Carl Dapper in Kissingen. Price Pf. 80.

Specielle Muskelphysiologie oder Bewegungslehre. Von Dr. R. du Bois-Reymond, Privat docent in Berlin. Price M. 8.

KARGER, S. Karlstrasse, 15, Berlin.

Die Krankheiten der Nase und des Nasenrachens, mit besonderer Berücksichtigung der Rhinologischen Propädeutik. Für praktische Aerzte und Studirende. Von Dr. Carl Zarniko in Hamburg. Zweite, gänzlich umgearbeitete Auflage. Erste Hälfte: Propädeutik. Price M. 5. 60.

Handbuch der Pathologischen Anatomie des Nervensystems. Herausgegeben von Dr. E. Flatau in Warschau, Priv.-Doc. Dr. L. Jacobsohn in Berlin und Priv.-Doc. Dr. L. Minor in Moskau. I. Abtheilung (Bog. 1-20). Price M. 10.

Grundriss der pathologischen Histologie des Auges. Von Dr. Siegmund Ginsberg, Augenarzt in Berlin. Price M. 13.

KIMPTON, HENRY, 13, Furnival-street, Holborn, E.C.

The Principles and Practice of Gynecology. For Students and Practitioners. By E. C. Dudley, A.M., M.D., Professor of Gynecology, North-western University Medical School. Third edition, revised and enlarged. Price 21s. net.

LEWIS, H. K., 136, Gower-street, W.C.

Diseases of the Skin, their Description, Pathology, Diagnosis, and Treatment, with Special Reference to the Skin Eruptions of Children. By H. Radcliffe-Crocker, M.D. Lond., F.R.C.P., Physician for Diseases of the Skin in University College Hospital. Third Edition. Two volumes. Price 28s. net.

Inoculation against Malaria. By Dr. Philalethes Kuhn, Staff Surgeon to the Imperial Troops of the South-West Africa Protectorate. Translated by R. A. Nesbitt, M.A. Price 2s. net.

Massage and the Original Swedish Movements. By Kurre W. Ostrom, from the Royal University of Upsala, Sweden. Fifth edition, revised and enlarged. Price 3s. 6d. net.

LIFE ASSURANCE MEDICAL OFFICERS' ASSOCIATION, London.

Transactions of the Life Assurance Medical Officers' Association, London, comprising the Report of the Proceedings for 1900 and 1901. Price not stated.

MURRAY, JOHN, Albemarle-street, W.

Experiments on Animals. By Stephen Paget. With an introduction by Lord Lister. New and revised edition. Price 6s.

REEMAN, LIMITED, 129, Shaftesbury-avenue, W.C.

Biographic Clinics. The Origin of the Ill-health of De Quincey, Carlyle, Darwin, Huxley, and Browning. By George M. Gould, M.D., Editor of American Medicine. Price 5s. net.

Clinical Obstetrics. By Robert Jardine, M.D. Edin., M.R.C.S. Eng., F.F.P. & S. Glasg., F.R.S. Edin., Senior Physician to the Glasgow Maternity Hospital. Price 15s. net.

Anatomy and Histology of the Mouth and Teeth. By I. Norman Broomell, D.D.S., Professor of Dental Anatomy, Dental Histology, and Prosthetic Technics in the Pennsylvania College of Dental Surgery, Philadelphia. Second edition, revised and enlarged. Price 21s. net.

A System of Physiologic Therapeutics. Edited by Solomon Solis Cohen, A.M., M.D. Volume v.: Prophylaxis, Personal Hygiene, Civic Hygiene, Care of the Sick. By Joseph McFarland, M.D., Henry Leffmann, M.D., Albert Abrams, A.M., M.D., and W. Wayne Babcock, M.D. Price 12s. 6d. net. Volume ix.: Hydrotherapy, Thermotherapy, Heliotherapy, and Phototherapy. By Dr. Wilhelm Winternitz of Vienna, assisted by Dr. Alois Strasser and Dr. B. Buxbaum. Balneology and Crounotherapy. By E. Heinrich Kisch of Prague. Translated by Augustus A. Eshner, M.D.; and with notes by Guy Hinsdale, M.D., A. C. Peale, M.D., J. H. Kellogg, M.D., and Harvey Cushing, M.D. Price 12s. 6d. net.

STUBER, A. (C. KABITZSCH), Würzburg.

Beiträge zur Klinik der Tuberkulose. Herausgegeben von Dr. Ludolph Brauer, a. o. Professor an der Universität Heidelberg. Heft 1. Price M. 5.

URBAN UND SCHWARZENBERG, Berlin and Vienna.

Encyklopädie der Mikroskopischen Technik, mit besonderer Berücksichtigung der Färbelehre. Herausgegeben von Prof. Dr. Paul Ehrlich, Dr. Rudolf Krause, Dr. Max Mosse, Prof. Dr. Heinrich Rosin, und Prof. Dr. Carl Weigert. III. Abtheilung (Bog. 51 Schluss des Werkes). Preis M. 15; K. 18.

VEIT AND COMP., Leipzig.

Die Sehnenüberpflanzung und ihre Verwertung in der Behandlung der Lähmungen. Von Dr. Med. Oscar Vulpius, Privatdozenten der Chirurgie an der Universität Heidelberg. Price M. 6.

VOGEL, F. C. W., Schillerstrasse, 8, Leipsic.

Hyperämie als Heilmittel. Von Professor Dr. August Bier in Greifswald. Price M. 10.

Die Entwicklung des Glaskörpers. Von Dr. M. v. Lenhossék, o. Professor der Anatomie an der Universität Budapest. Vorgelegt der ung. Akademie der Wissenschaften am 20. Oktober, 1902. Price M. 12.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.

BAYLY, HUGH WANSEY, M.R.C.S., L.R.C.P. Lond., has been appointed House Surgeon to the Hospital for Sick Children, Great Ormond-street.

EGLINTON, GEORGE WALTER, L.R.C.P., L.M. Ed., L.F.P.S. Glasg., has been appointed Medical Officer of Health for the Wells (Somerset) Rural District Council.

HUTCHINSON, HY., L.R.C.P., L.S.A. Lond., has been appointed Surgeon to the London and India Docks Employés for the Districts of East Ham, Upton, and Manor Park.

LITLER-JONES, T. C., F.R.C.S. Eng., has been appointed Honorary Assistant Surgeon to the Liverpool Royal Infirmary.

LYNCH, M. E., L.R.C.P.I., L.R.C.S.I., has been appointed Medical Officer for Clashmore, co. Waterford, Dispensary District.

MCMORDIE, D., M.B., C.Ch. R.U.I., has been appointed House Physician to the Sheffield Royal Hospital.

MARSHALL, R. PRYNNE, M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Medical Officer to the Third District of the St. Olave's Union and Certifying Surgeon to the Bermondsey Borough Council.

MONCKTON, WILLIAM, L.R.C.P., L.M. Ed., M.R.C.S., has been appointed Medical Officer of Health for the Portishead Urban District Council.

SCHOFIELD, F. W., M.B., C.Ch. Vict., has been appointed Assistant House Surgeon to the Sheffield Royal Hospital.

SHAW, G. H., M.B., Ch.B. Vict., has been appointed House Surgeon to the Sheffield Royal Hospital.

STEWART, G. N., M.D. Edin., D.P.H. Camb., Professor of Physiology, Western Reserve University, Cleveland, U.S.A., has been appointed Professor of Physiology in the University of Chicago.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

AUCKLAND RURAL DISTRICT COUNCIL.—Medical Officer of Health. Salary £350 per annum.

BIRMINGHAM GENERAL HOSPITAL.—Resident Pathologist. Salary £100 per annum, with board and residence.

BRADFORD POOR-LAW UNION HOSPITAL AND WORKHOUSE.—Resident Assistant Medical Officer, unmarried. Salary £125, with rations, apartments, and washing.

BRADFORD ROYAL INFIRMARY. — Dispensary Surgeon, unmarried. Salary £100 per annum, with board and residence.

BRISTOL ROYAL INFIRMARY.—Resident Obstetric Officer. Salary £75 per annum, with board, lodging, &c. Also Junior House Surgeon and Anæsthetist, and Casualty Officer. Both for six months, with salaries at rate of £50 per annum, with board, lodging, and washing.

BURY INFIRMARY.—Junior House Surgeon. Salary £90, with board, residence, and attendance.

CARDIFF, UNIVERSITY COLLEGE.—Bacteriologist to the Joint Committee of the Glamorgan County Council and Cardiff Corporation and Lecturer in Bacteriology in the University College, Cardiff. Salary £300 a year.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria-park, E.—Second House Physician for six months. Salary at rate of £30 per annum, with board, washing, and residence.

DEVONSHIRE HOSPITAL, Buxton, Derbyshire.—Assistant House Surgeon. Salary £70 per annum, with apartments, board, lodging, and laundry.

FRENCH HOSPITAL AND DISPENSARY, Shaftesbury-avenue.—Junior Surgeon.

HORTON INFIRMARY, Banbury.—House Surgeon. Salary £80 per annum, with board and residence.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.—Clinical Pathologist and Bacteriologist. Honorarium 50 guineas.

INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY.—Junior House Surgeon. Salary £75 per annum, with residence, board, and washing.

KENT COUNTY ASYLUM, Barming-heath, Maidstone.—Fourth Assistant Medical Officer, unmarried. Salary £175 per annum, rising to £200, with residence, attendance, &c.

LANCASHIRE COUNTY ASYLUM, Preston, Whittingham.—Assistant Medical Officer, unmarried. Salary £150, with apartments, board, washing, and attendance.

LEEDS GENERAL INFIRMARY.—Resident Medical Officer. Salary £100 per annum, with board, residence, and washing.

LONDON COUNTY ASYLUM, Hanwell, W.—Junior Assistant Medical Officer. Salary £150 per annum, with board, apartments, and washing.

MANCHESTER ROYAL INFIRMARY CONVALESCENT HOSPITAL, Cheadle.—Assistant Medical Officer, unmarried, for six months. Salary at rate of £80 per annum, with board and residence.

METROPOLITAN HOSPITAL.—Casualty Officer, Pathologist, and Registrar. Salary at rate of £110 per annum.

NEWCASTLE-ON-TYNE DISPENSARY.—Two Visiting Medical Assistants. Salary £160.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury.—House Physician. Salary £100, with board and apartments.

PARISH OF ST. PANCRAS SCHOOLS, at Leavesden, near Watford, Herts.—Medical Officer. Salary £150 per annum, rising to £200, and luncheon.

PRESTWICH, MANCHESTER, COUNTY ASYLUM.—Junior Assistant Medical Officer, unmarried. Salary £150, increasing to £250 with board, apartments, and washing.

ROCHFORD UNION.—Medical Officer and Public Vaccinator of the Rochford District. Salary £64 per annum, with fees. Also Medical Officer of the Workhouse. Salary £50, with fees.

ROTHERHAM HOSPITAL AND DISPENSARY.—Senior House Surgeon. Salary £110 per annum, with rooms, commons, and washing.

ROYAL NATIONAL HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Ventnor.—Assistant Resident Medical Officer, unmarried. Salary £100 per annum, with board and lodging in the hospital.

SWANLEY, KENT, WHITE OAK OPHTHALMIA SCHOOL (METROPOLITAN ASYLUMS BOARD).—Assistant Medical Officer. Salary and allowance £250 per annum.

TORQUAY, BOROUGH OF.—Medical Officer of Health. Salary £400 per annum, rising to £500.

WEST DERBY UNION WORKHOUSE AND HOSPITAL, Walton, Liverpool.—Senior Resident Medical Officer, unmarried. Salary £150 per annum, with board and apartments and fees.

YORK, NORTH RIDING ASYLUM, Clifton.—Senior Assistant Medical Officer, unmarried. Salary £200, rising to £400.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies under the Factory and Workshop Act, for Surgeon, at Falkland, in the county of Fife; at Witney, in the county of Oxford; at Annbank, in the county of Ayr; at Hawick, in the county of Roxburgh; at Kingswinford, in the county of Stafford; at Allendale, in the county of Northumberland; and at Newton-le-Willows and Ashton-in-Makerfield, in the county of Lancaster.

Births, Marriages, and Deaths.

BIRTHS.

CARTER.—On Jan. 27th, at Dartford, the wife of Arthur Burnell Carter, M.R.C.S., of a daughter.

DUFFUS.—On Jan. 27th, at Thurleigh-road, Wandsworth-common, S.W., the wife of Henry Duffus, M.A., M.B., C.M. Aberd., of a daughter.

PATRICK.—On Jan. 30th, at Stoneygate, Leicester, to J. W. Patrick, M.D. Durh., L.R.C.S., L.R.C.P. Edin., and Mrs. Patrick—a son.

MARRIAGES.

HOOLE—TURNER.—On the 27th ult. at Solihull, Warwickshire, John Hoole, M.R.C.S. Eng., L.S.A. Lond., of Parwich, Derbyshire, to Mabel Adeline, second daughter of J. W. Turner, Esq., The Croft, Yardley, Worcestershire.

POCOCK—PLATTS.—On Jan. 10th, at S. Mary's Church, Poona, Major Herbert Innes Pocock, R.A.M.C., to Edith Shepard Platts, eldest daughter of the late Francis Thomas Platts.

DEATHS.

CULPEPER.—On Jan. 28th, at Notting-hill, William Moe Culpeper, M.R.C.S., aged 83.

TURNER.—On Feb. 1st, 1903, at 53, Queen Anne-street, Cavendish-square, Martha Orr Turner, formerly of The Bays, Oakhill-road, Putney, widow of the late Frederic Turner of Nizels, Tunbridge, Kent, aged 74. Service at St. James, Westmorland-street, Weymouth-street, W., on Thursday, Feb. 5th, at 2.15 P.M.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

THE PRESCRIBING QUACK.

A CORRESPONDENT has forwarded to us a card in an envelope which was left at his house. The envelope is addressed in print, "To the Lady of the house." The card inside, a four-page one, states on its front page that it is "A private note from Francis E. Bustard (M. P. S.), Cash Price Chemist, Medical Herbalist, &c., 668, Seven Sisters-road, South Tottenham." On pages 2 and 3 is the following:—

> MADAM,—A word to the wise is sufficient. In all cases of Indigestion, Persistent or Recurrent Headaches, Habitual Constipation, Anæmia, Bad Legs, and other forms of Female Weakness or Irregularity, prompt attention is the only method of averting serious trouble.
>
> If you present this Card at my counter you will be shown at once into my private consulting room. I charge nothing for advice and I WILL HELP YOU IF I CAN. At any rate a few minutes' strictly private conversation with a fully qualified Chemist will cost you nothing, and a few herbs, a box of pills, or a bottle of medicine IF TAKEN IN TIME may save you a great deal of suffering and expense. I am, Madam,
>
> At your Service,
>
> FRANCIS E. BUSTARD, (M.P.S.)

On page 4 we notice that Mr. Bustard sells "No. 4 Special Female Pills, Ladies' Occasional Mixture, Female Corrective Herbs, and Female Injection Powder." From these items and from the references to "Female Weakness or Irregularity" on page 2 of the card it is quite easy to see what manner of trade Mr. Bustard carries on, and we commend his business not only to the notice of the Pharmaceutical Society but also to that of the police.

WANTED—SUGGESTIONS FOR TREATMENT.

To the Editors of THE LANCET.

SIRS,—Will one of your readers kindly advise what treatment should be adopted in the case of a man, about 42 years of age, whose spleen is five times larger than normal. At present he is not feeling in first-class health but is suffering no inconvenience from the enlargement. Would it be advisable to remove the spleen? Has any other treatment been successful in similar cases? Have the Roentgen rays been used with success in such a case? The following is the result of an analysis of the blood:—Macroscopic appearance, pale; fibrin, decreased; coagulation, slow; specific gravity, 1051; hæmoglobin, 52 per cent.; erythrocytes, 2,812,800; leucocytes, 8933; ratio of leucocytes to erythrocytes, 1—314. *Erythrocytes.*—Normocytes, pale; microcytes, many present; macrocytes, medium number; poikilocytes, considerable number; schistocytes, absent; normoblasts, 20 to the cubic millimetre; microblasts, absent; megaloblasts, absent; blood plates, decreased. *Leucocytes.*—Lymphocytes (small), 24·25 per cent.; lymphocytes (large), 10·75 per cent.; polymorphonuclear neutrophiles, 64·50 per cent.; eosinophiles, 25 per cent.; myelocytes, none; basophiles, 25 per cent.; myelocytic eosinophiles, none. *Parasites.*—Plasmodium malariæ, none.

I am, Sirs, yours faithfully,

Feb. 2nd. CLARKDON.

THE SPRING-AXLE BICYCLE.

MR. S. HALL of 56, St. Augustine's-road, Camden-square, London, N.W., asks us to call attention to an invention which consists of helical springs, having two and a half inches vertical play, contained in tubular plungers connected to, and forming part of, the fork and frame of a bicycle, and fitted to slide in tubes or cylinders rigidly fixed to the axles, the upper ends of the springs bearing on the under side of capped nuts at the top of the plungers, and their lower ends on the upper edge of small plates fixed across the cylinders, long longitudinal slots in the plungers permitting the sliding action under the play of the springs. In the lower part of the plungers are similar but shorter springs the upper ends of which abut on the under edge of the small plates, their duty being to prevent the plates coming in contact with the bottom of the slots when the springs proper cease to be in compression. Among the advantages which the inventor claims for the "spring-axle" are reduction of wear and tear throughout the machine and greater comfort to the rider. Theoretically the "spring-axle" bicycle seems to possess the advantages which its inventor claims for it, but time only can prove its merits. It should be mentioned that the invention can be applied to motor cars as well as to cycles.

MOLASSES AS A "CURE FOR CANCER."

A MEDICAL man in Kent has sent us a cutting from a Queensland newspaper which states that two men in that colony claim to have been cured of cancer by taking about a tablespoonful of molasses four or five times a day. In one of them the seat of the trouble was at the root of the tongue and quite disappeared after ten days' treatment. The other patient suffered from "the same complaint" in the stomach and for him a three months' course of the remedy was required, after which he was able to resume his work as a labourer on

a wharf. Each of these individuals seems to have been unconsciously neglectful of his duty both to himself and to his fellow men, for he has omitted to supply the proofs of his case necessary to raise him to the position of a historical personage and (which is worse) he has authorised the publication of a "claim to have been cured of cancer" which may delude some genuine sufferers and tantalise them by raising hopes foredoomed to disappointment.

"THE GOLFER'S DIARY AND MATCH BOOK."

WE have received for review from Messrs. John Walker and Co., Limited, of Farringdon House, E.C., several specimens of the "Golfer's Diary and Match Book," which has been compiled for them by Mr. T. B. Earle. The immense popularity which golf now enjoys among men of all ages makes the game a factor in our national health, so that perhaps to notice a pocket-book devised for the use of the golf-player is not going so far outside our proper sphere as it may appear to some to be. As citizens it might be our duty to point out that far too much time is spent by many men in pursuit of this engrossing game, but as medical men we are bound to weigh against this fact the other fact that in golf thousands find a form of exercise and relaxation which is their only safeguard against physical breakdown. We have given the diaries to a member of our staff, an enthusiastic golfer, who has reported of them to us very favourably. In enlarging on the merits of the game to us, and in an exposition which he insisted on making of certain of the procedures of golf-etiquette, he became technical to the point of incomprehensibility, but his commendation of the diaries was perfectly clear. He considered that if every regular golfer carried such a book about with him the opportunity of immediately referring to the rules would obviate many annoying disputes, while a regular record of the year's performances would instil hope into some breasts and humility in others—his opinion apparently being that his fellow golfers are, as a rule, either unnecessarily depressed or unduly bumptious. The diaries are supplied in various covers at prices ranging from 1s. to 10s., the contents being renewable each year for 1s.

CURIOSITIES OF THE MEDICAL DIRECTORY.

A CORRESPONDENT, encouraged, we fear, by the lapse from seriousness of a recent annotation in our columns, writes to us as follows: "It appears that in none of the sections, London, Provincial, Wales, &c., is there the name of any medical man beginning with X, which, perhaps, is not x-traordinary. In Wales there is no U, which is un-U-sual, and there is no Y Z there, which is too general a statement to be libellous. In Scotland there is no Q, which is certainly Q-rious. In Ireland there is no Z, which is Y the list finishes with a Y. As for the dentists, they have only got one I amongst them." We publish our correspondent's note, but in doing so we warn him that a repetition of such facetiousness will shake our confidence in his ability to discharge his onerous and responsible duties.

MADAME SPITZNER'S GREAT MUSEUM.

WE learn that this exhibition, to which we called attention in THE LANCET of Jan. 24th, was raided by the police on Feb. 4th. The proprietress and other persons connected with the show were arrested and the place was closed.

THE TESTIMONIALS TO ODOL.

A CORRESPONDENT points out to us that among the testimonials to the value of Odol which have reached him in a circular is one from Dr. Leonard Wilde who has been dead, he says, two years. We believe Odol to be a new preparation, so that it is difficult to see how a physician who has been dead two years could have given a good report of it. In view of recent communications to the medical press we think that the proprietors of Odol should be more careful about their circular advertisements.

KEEN'S OPERATION IN TORTICOLLIS.

To the Editors of THE LANCET.

SIRS,—I should be obliged if some one could tell me (through your correspondence columns) if Keen's operation should be done *on both sides* in a case of spasmodic torticollis in which the (clonic) spasm is now confined to the left side, whereas 18 months ago it was found in the right side only, having continued there for more than a year.

Does this change indicate that the cells in the anterior cornua on the right side are now exhausted and therefore that a unilateral operation will be sufficient? I am, Sirs, yours faithfully,

Jan. 27th, 1903. A. C. R.

A REVOLVER FOR 7*s.* 9*d.*

THE origin of the cheap weapons used by mischievous boys, criminals, and persons mentally deranged is not always traceable. At Bow-street police court, however, evidence was given recently in the case of two burglars apprehended with revolvers upon them that they bought their pistols for 7*s.* 9*d.* each from Messrs. Gamage and Co. in Holborn. The price and the ease with which such dangerous articles can be bought by anyone are the points to which attention should be directed. The number of suicides by shooting that have occurred lately has been too great for attention to be drawn to individual cases. The danger arising from the pistol traffic to public personages has also been emphasised by the incident which has taken place in Spain and by the trial at the Old Bailey of the lunatic who called at the German Embassy and failing to obtain an audience from any official within, shot a cab horse outside. No comment seems to be needed upon cases such as this; perhaps when a valuable life has been sacrificed something will be done.

P. S. H.—As a rule British diplomas and degrees entitle medical men to practise in Canada without any examination. A licence must be obtained from the provincial medical boards and certain fees have to be paid for the registration of qualifications. Complete information on the subject is contained in the "Professional Handbook," No. 11, issued by the Emigrants' Information Office, 31, Broadway, Westminster, S.W. Our correspondent might also apply to the same office for information with regard to his second question.

P. P. (M.B.) and Y. D. (M.D.).—We have published many protests in the sense suggested by our correspondents but with little effect. It is disgraceful, and a terrible commentary on modern morals, that papers with a wide circulation should spread such lies because advertisers have paid for their insertion. With one of these articles—the one "that removes all obstructions"—we have dealt in our series of articles entitled "Quacks and Abortion" (THE LANCET, June 24th, 1899, p. 1739).

Inquirer.—It would have been better to avoid the situation and we think that the town councillor would have been well advised to abstain from voting. The election of his assistant is perfectly legal and public opinion, if nothing else, may probably be trusted to make him a just representative of authority in spite of his personal relations with the medical officer of health.

Lusitania.—For a foreign medical man who desires to exercise his profession in Portugal it is necessary to pass an examination held by the Faculty of Medicine of Lisbon, Coimbra, or Oporto. He will then be able to practise in Portugal and also in Portuguese colonies. The total fees, including examination and registration, amount to about £60.

General Practitioner is advised not to enter into such an arrangement. He will make himself the servant of lay employers. The present system is preferable. As far as we can see the emoluments are as large and every bit as certain, while the independence should be greatly prized.

B. B.—We do not know any book that gives satisfactory information upon the point. It will be best for our correspondent to seek the advice of an experienced friend on the general question. If any particular points arise a medical man might be consulted.

T. K. C. is thanked for his letter and its inclosure. We do not think that the official attitude is worth criticising; it is so manifestly silly and opinionated.

M.D. (Captain I.M.S.).—Our attention has already been drawn to the matter, but we believe the lady to have been the victim of injudicious friends.

L. N.—No.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (9th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.).

TUESDAY (10th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.) London Throat (9.30 A.M.), Royal Ear (3 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.).

WEDNESDAY (11th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M).

THURSDAY (12th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (5.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

FRIDAY (13th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.).

SATURDAY (14th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (9th).—MEDICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—8.30 P.M. Discussion on the Treatment of Epilepsy (opened by Dr. J. S. Risien Russell and Sir Victor Horsley).

SOCIETY OF ARTS (John-street, Adelphi, W.C.).—8 P.M. Mr. J. Hübner: Paper Manufacture. Lecture II.—Soda Recovery; Manila Hemp; Jute and other Raw Materials; Mechanical Wood Pulp; Wood Cellulose; Beating; Sizing; Loading; Colouring. (Cantor Lecture.)

TUESDAY (10th).—ROYAL MEDICAL AND CHIRURGICAL SOCIETY (20, Hanover-square, W.).—8.30 P.M. Paper:—Mr. P. R. W. de Santi: A Report on Four Cases of Acute Septic Inflammation of the Throat with Bacteriological Examination of each. (A sequel to a similar paper read by Sir Felix Semon, April, 1895.)

WEDNESDAY (11th).—SOUTH-WEST LONDON MEDICAL SOCIETY (Bolingbroke Hospital, Wandsworth Common).—8.45 P.M. Paper:—Mr. W. E. Miles: The Diagnosis and Treatment of Certain Common Affections of the Rectum met with in General Practice.

DERMATOLOGICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—5.15 P.M. Demonstration of Cases of Interest.

THURSDAY (12th).—BRITISH GYNÆCOLOGICAL SOCIETY (20, Hanover-square, W.).—8 P.M. Specimens will be shown by Dr. Macnaughton Jones and others. Dr. H. Smith (President): Introductory Address.

FRIDAY (13th).—THE INCORPORATED SOCIETY OF MEDICAL OFFICERS OF HEALTH (9, Adelphi-terrace, Strand, W.C.).—7.30 P.M. Dr. E. W. Hope: The Renewal of the Vaccination Act.

CLINICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8.30 P.M. Papers:—Mr. H. L. Barnard: Treatment of Suppurative Arthritis.—Dr. S. Barnes (introduced by Sir William Gowers): A Case of Local Panatrophy.—Mr. A. A. Bowlby, C.M.G.: A Case of Acute Pancreatitis.—Dr. F. Taylor: A Case of Acute Pancreatitis.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (9th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. J. J. Pringle: Clinique. (Skin.) 5.15 P.M. Mr. D. Drew: Diseases of the Breast.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Davis: Affections of the Bronchi.

TUESDAY (10th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. C. T. Williams: Clinique. (Medical.) 5.15 P.M. Mr. E. Clarke: Defects of Refraction.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. Bidwell: Plaster of Paris Splints.

UNIVERSITY OF LONDON (Physiological Laboratory).—5 P.M. Dr. W. D. Halliburton: On the Chemistry of Muscle and Nerve. (Lecture on Advanced Physiology.)

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury).—3.30 P.M. Sir Wm. Gowers: Degenerative Diseases.

WEDNESDAY (11th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. J. Clarke: Clinique. (Surgical.) 5.15 P.M. Dr. C. O. Hawthorne: The Visual Field in Chronic Nervous Disease. I.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. D. Robinson: Pelvic Pain.

THE SANITARY INSTITUTE (Parkes Museum, Margaret-street, W.).—8 P.M. Discussion on the Present Shortage of Water available for Supply (opened by Mr. W. Whitaker). General discussion is invited.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).—4 P.M. Dr. J. J. Perkins: The Abdominal Manifestations of Thoracic Disease.

THURSDAY (12th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. J. Hutchinson, jun.: Clinique. (Surgical.) 5.15 P.M. Dr. C. O. Hawthorne: The Visual Field in Chronic Nervous Disease. II.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. Baldwin: Treatment of Some Injuries and Emergencies.

UNIVERSITY OF LONDON (Physiological Laboratory).—5 P.M. Dr. T. G. Brodie: On the Circulation. (Lecture on Advanced Physiology.)

CHARING CROSS HOSPITAL.—4 P.M. Dr. A. Routh: Gynæcological Lecture. (Post-Graduate Course.)

THE HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Dr. Voelcker: The Sequelæ of Diphtheria.

FRIDAY (13th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. R. Lake: Clinique. (Throat.) 5.15 P.M. Dr. H. Tilley: Purulent Nasal Discharges. II.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. R. Jones: States of Mental Depression—Melancholia, Katatonia.

UNIVERSITY OF LONDON (Physiological Laboratory).—5 P.M. Dr. A. D. Waller: On the Action of Anæsthetics and Narcotics. (Lecture on Advanced Physiology).

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET ***should be addressed "To the Manager."***

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. II. of 1902, which was completed with the issue of Dec. 27th, and the Title-page to the Volume, were given in THE LANCET of Jan. 3rd.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1902 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

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WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Stewart's Instruments.)

THE LANCET Office, Feb. 5th, 1903.

Date	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radiation in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
Jan. 30	30·26	WSW	...	81	52	42	44	47	Cloudy
,, 31	30·01	S.W.	...	72	47	42	41	43	Cloudy
Feb. 1	29·52	S.W.	0·05	64	45	38	41	43	Cloudy
,, 2	29·82	N.W.	0·06	63	43	33	33	35	Overcast
,, 3	30·28	WSW	0·01	53	49	35	39	40	Overcast
,, 4	30·37	W.	...	53	50	40	46	48	Overcast
,, 5	30·36	S.W.	...	52	49	46	46	47	Overcast

During the week marked copies of the following newspapers have been received: *Tenby and County News, Dublin Express, Bradford Observer, Morning Post, Hereford Mercury, Daily Graphic, Sanitary Record, Local Government Chronicle, Mining Journal, Hertfordshire Mercury, Burton Chronicle, Dumfries and Galloway Courier and Herald, Walsall Observer, Halifax Evening Courier, Warrington Guardian, Yorkshire Post, Sussex Daily News, Colchester Gazette, Belfast News Letter, Birmingham Post, Aberdeen Free Press (Weekly), Folkestone Telegraph, Brighton Gazette, Surrey Advertiser, Bristol Mercury, &c.*

Communications, Letters, &c., have been received from—

A.—Dr. P. S. Abraham, Lond.; Aymard Patent Milk Sterilizer Co., Ipswich; Africander; A. L.; Dr. C. K. Austin, Paris; Dr. F. P. Atkinson, Bexhill-on-Sea; Messrs. Arnold and Sons, Lond.; Dr. H. K. Abbott, Fareham; Dr. J. J. Abrahams, Lond.; Dr. H. R. Andrews, Lond.; Dr. A. G. Auld, Lond.; Assistant Serjeant-at-Arms; *Auckland Chronicle*, Bishop Auckland, Manager of.

B.—Mr. R. C. Bartlett, Romsey; Mr. Haydn Brown, Surbiton; Dr. J. Burnet, Edinburgh; Sir J. Blyth, Lond.; Dr. J. Barrett, Clapham; Birmingham General Hospital, House Governor of; Messrs. Brown and Pank, Lond.; Bury Infirmary, Secretary of; Mr. C. Birchall, Liverpool; Mr. R. E. W. Brewer, Newport, Mon.; Mr. B. Brooks, Stratford; Messrs Bedford and Co., Lond.; Borough of Torquay, Town Clerk of.

C.—Sir F. Cruise, Dublin; Messrs. A. Constable and Co., Lond.; Croydon Corporation, Accountant of; Chemical Manure Manufacturers' Association, Lond.; Messrs. J. and A. Churchill, Lond.; City of London, Medical Officer of Health of; Mr. T. Kilner Clarke, Huddersfield; Messrs. Cook and Co., Lond.; Mr. H. C. M. M. Charter, Bradford; Chelsea Hospital for Women, Lond., Secretary of.

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T.—Dr. H. M. Tickell, Nordrach; Messrs. Teofani and Co., Lond.; Dr. F. T. Talbot, Stockton-on-Tees; Dr. Campbell Thomson; T. G.

U.—Messrs. Urban and Schwarzenberg, Berlin.

W.—Mr. J. Williams, Bradford; Mr. S. Wand, Leicester; Dr. G. R. W. Watson, Barkly East; Mr. M. Way, Portsmouth; W. W.; Mr. Whittington, Oxford; Mr. W. M. Willis, Nottingham; Dr. B. Windle, Birmingham; Dr. T. Jason Wood, Bradford; Mr. H. C. Wilkins, Coventry; Mr. W. W. Wagstaff, Sevenoaks; *Westminster Gazette*, Editor of; Dr. H. Wilcox, Lond.; Dr. E. W. White, Dartford; Mr. F. A. Warner; Mr. F. C. Wallis, Lond.

Y.—Dr. W. A. Young, Manchester; Dr. D. W. Young.

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